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Recent graduates perceptions regarding the infusion of a global perspective into the curriculum of selected land-grant university colleges of agriculture

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Recent graduates perceptions regarding the infusion of a global
perspective into the curriculum of selected land-grant
university colleges of agriculture

by

Joe Edward Dale

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Agricultural Education

Major Professor: Robert A. Martin

Iowa State University

Ames, Iowa

1997

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For the Graduate College

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CHAPTER I: INTRODUCTION

There is much discussion of the global nature of our world. Recent technological advances in transportation and communication are undeniably an important factor in this. However, interaction and interdependence in the world is by no means a recent phenomenon. The history of civilization is one of interaction between continents and peoples. But the number and scope of these interactions and interdependencies has increased dramatically in recent centuries as has the number of people affected by them (Anderson in Pike and Selby, 1988).

A great number of people have yet to recognize the affect this increased interconnectedness has on them. Or if it is recognized, the meaning goes no further than the affect it will have on their own lives and in their own area. This parochialism seems to occur more often in areas with less opportunity for personal interaction. One such area is the midwest region of the United States. Despite the diffusion of transportation and communication technology, this region is still relatively isolated in terms of interactions with other people. This is particularly true in rural areas.

This is the unfortunate circumstance at a time when it is generally agreed among leaders of the U.S. government, business, and other interests that we are in an age of unprecedented interrelationships with foreign governments and peoples. In particular, we have recently seen the development of an evolving international system of agriculture based upon a

system of international trade (Schuh, 1985). This development has brought with it an opportunity for increased interaction between nations. Many also believe that with this increased interaction comes the need for additional skills to conduct matters in a global setting. Therefore, for citizens of the United States to interact effectively we will need an education appropriate to develop these skills.

Statement of the Problem

Some sectors have recognized the need for this change in curriculum. The public sector recognized it in the post World War II atmosphere by establishing area studies programs in institutions of higher learning. Evans (1989) considered human resources a key to success in international business. Some international businesses are beginning to recognize the need for training programs to develop personnel for overseas assignment (Tung, 1984). The colleges of agriculture in the land-grant university system produce a great number of graduates that are involved in international agriculture on a social and economic level. Since both private and public sectors have identified the need for preparation in an international environment as a skill they require, then it is necessary for the land-grant university colleges of agriculture to prepare graduates to meet this challenge.

Purpose of the Study

The development of properly trained graduates by land-grant colleges of agriculture to meet global challenges is essential. A number of studies have already been conducted with segments of the university constituency to begin to address this issue. Recent graduates of colleges of agriculture represent an important element in this constituency which had not yet been studied. Therefore, the primary purpose of this study was to identify the perceptions held by recent graduates of selected land-grant university colleges of agriculture towards a global perspective in higher education in agriculture. A secondary purpose was to generate strategies for curriculum reform that will enhance global perspective education in the colleges of agriculture of land-grant universities. The specific objectives included:

1. To identify selected demographic information of recent graduates of selected midwest land-grant colleges of agriculture.
2. To identify perceptions held by recent graduates regarding adding a global perspective to curricula of selected colleges of agriculture.
3. To identify concepts and content areas critical to adding a global perspective to the study of agriculture in selected colleges of agriculture.
4. To develop a framework for curriculum enhancement to provide a global perspective in the college of agriculture of land-grant universities.

Need, Implications and Educational Significance

The internationalization of the curriculum is justified in social and economic terms (Bruce, 1991). We have entered the age of the global economy. To be effective in this global climate, government, business, and other employers need employees who are able to function in other countries and cultures. Internationalization requires new educational techniques to ensure graduates have the proper skills to be effective in these interactions.

Literature suggests that some companies are now moving towards preparing their personnel to meet the global challenge. A global perspective represents a set of skills which at least some employers are eager for their employees to possess. The colleges of agriculture in land grant universities can make significant progress towards supplying well prepared graduates by instituting programs that develop these skills.

In the social realm, global interaction has increased dramatically through communication and transportation technology. No longer can a country, particularly the United States, retreat into an isolationist mode. Increasingly, global dilemmas need to be solved by world cooperation. Challenges such as environmental degradation, ethnic conflict, and others require many nations to work together for long-term solutions. To achieve these solutions requires personnel to possess both the needed technical skills and the expertise

through which to use those skills effectively in a multinational environment.

A number of studies (Dale, et al., 1997; Sammons, 1995; Wirth, 1995; King, 1991) have been conducted at Iowa State University to respond to this issue. These studies identified perceptions held towards a global perspective in education by such diverse groups as Iowa State University College of Agriculture faculty, Iowa agri-businesspersons, Iowa State University College of Agriculture students and others. However, former students of colleges of agriculture who have recently completed study and have gone on to apply the knowledge gained in their chosen fields have not been studied. This study filled that void by identifying perceptions held by college of agriculture students in three midwest land-grant universities towards a global perspective in education. The study also identified content areas that this population believed were important to adding a global perspective to education in colleges of agriculture. With this and other information from previous research, this study offers a framework for adding a global perspective to colleges of agriculture.

Operational Definitions

Following is a list of key terms and their operational definitions.

Careers in international agriculture - Jobs which require a knowledge of the economic, social, and scientific aspects of agriculture in countries other than the U.S. These jobs include interaction with organizations in foreign countries without actual travel to the country or personal contact with individuals of the organization (Adler, 1981).

College of agriculture graduates - Persons receiving a minimum B.S/B.A. degree who majored in a field of study that has its administrative base in the College of Agriculture.

Global education - "the process by which people acquire: the ability to conceptualize and understand the complexities of the international system; a knowledge of world cultures and international events; and an appreciation for the diversity and commonalties of human values and interests" (Babich, 1986, p. 14, in Backman, 1993).

Global perspective - The ability to see the world as an interdependent system; to be aware of one's influence in the interactions of the world's system. The ability to perceive the world as a single system; to be aware of one's involvement in it; to act to influence the system (Sharma, 1983, in Backman, 1993).

International education- "A study of various geographical and cultural areas of the world" (Kobus, 1983, p. 21, in Backman, 1993).

International knowledge and skills - The ability to interact and function in settings and situations with people from other countries or in other countries themselves.

Land-grant institutions - The U.S. higher education institutions established through the Morrill Act.

Perception - An immediate judgment or a process of knowing objects, facts, etc. either by sense(s) or by thought. The ability to link what is sensed with past events in order to give meaning to situations as well as an awareness, feeling, and understanding of situations (Van Dalen, 1979).

Internationalization - "the incorporation of international contents, materials, activities, and understandings into the teaching, research, and public service functions of universities to enhance their relevance in an interdependent world" (Henson, Noel, Gillard-Byers, and Ingle, 1991).

CHAPTER II: REVIEW OF LITERATURE AND RESEARCH

There are a number of recent and past studies that have been conducted and literature written on topics that provide the theoretical framework for this study. This information moves from a general basis for a global perspective in education to its application to agriculture and higher education. The information related to the topic has been divided in this chapter into the following categories: (1) historical and philosophical basis for global education, (2) global perspective and curriculum, (3) economic and social aspects of global perspective in education, (4) global perspective for higher education in agriculture.

Historical and Philosophical Basis for Global Education

A fundamental part of human existence has been the search for information, knowledge, and wisdom. Throughout history this search has taken many forms which over time have developed into philosophies of education. The process of internationalization of learning has been in progress for 2500 years (Kerr, 1990). As the call for a global perspective in education rises in our time, it is important to put global education into a historical and philosophical perspective. This will allow a greater understanding of the process of transformation it has gone through and will give a deeper perspective on how it fits into the dominant thinking on education throughout history. The dominant Western

philosophies to be considered are liberal, progressive, behaviorist, and humanist philosophies.

Liberal Philosophy

Liberal education philosophy, the oldest Western philosophy, has its roots with Socrates, Plato, and Aristotle. In their opposition to a utilitarian approach to education supported by the Sophists, they proposed an approach that would produce a virtuous man who would be a wise ruler. This was accomplished through the rigorous study of grammar, rhetoric, natural sciences, history, literature, logic and philosophy (Elias & Merriam, 1980). As Western Europe sank into the dark ages, the Church maintained the liberal education philosophy, thanks in part to the efforts of Augustine and Thomas Aquinas (Piltz, 1981).

The liberal education tradition continued to influence dominant educational philosophies through history. The liberal tradition was transplanted to the United States during the Colonial period. The first and most prestigious college in America, Harvard, adopted the traditional subjects and methods of teaching. Other colleges followed Harvard's lead by adopting liberal studies as the proper education for the next generation of leaders and professionals. Following a brief wane between the Civil War and World War I, there was a resurgence of interest in liberal arts education. This was in large part a counteraction to the dominance of the progressive

philosophy and its more pragmatic and utilitarian approach to education (Elias and Merriam, 1980). Some authors argue, however, that true liberal education has been largely lost in this country, much to its detriment (Hutchins, 1954).

The relationship of internationalization to liberal education is long and varied. The Platonic view of liberal education of producing the wise and virtuous philosopher-king required the knowledge of languages and other subjects along with the wisdom to effectively deal with transnational issues. In this period writers such as Pindar and Herodotus began to recognize and chronicle the differences in custom and culture of different peoples (Fraser & Brickman, 1968). The church, as the only organization to survive the dark ages that preserved the system of civil administration, kept up international contacts which required the acquisition of foreign languages by church officials. Much of the writings of Aristotle found their way to Europe at the beginning of the Renaissance through translation from a second language, particularly Arabic (Piltz, 1981).

From the mid-fifteenth to mid-nineteenth centuries the liberal arts tradition was an important part of the classical humanist philosophy which was dominant in the period. The international aspect of education was a factor due to the inception and expansion of world travel and trade. An international perspective was important in dealing with the international relationships being forged. Liberal education

philosophy enjoyed a resurgence in America following World War I in order to explore the uses of science and technology in a philosophic mode. This brought the international perspective back into importance as scholars and policy-makers considered the effect of science and technology on the theoretical wisdom question of the relationship between the human situation and the world (Elias & Merriam, 1980). Once again, however, Hutchins (1954, 1968) argued that there is no real liberal education being conducted in the U.S. and therefore we do not really have a grasp of the effect of science and technology on the human condition.

Progressive Philosophy

In contrast to the ancient roots of liberal education, the progressive educational philosophy is relatively young. Its earliest idea dates back to Comenius in the 16th century and was added to by the likes of Rousseau, Froebel and finally Bacon and Locke in the 18th century. The basic philosophy which supports progressive education is based on the inductive rather than deductive method of discovery expressed by Darwin. Its basis was in the empirical and scientific thought that had spread from Europe to America.

Herbert Spencer developed Darwin's ideas into an educational philosophy emphasizing science to enhance human life. From this came a movement for progressive education at the turn of the 20th century to solve social problems in the

United States. Two important elements to the movement were the attempt to assimilate the large number of immigrants of the period into U.S. society and the advent of vocational education (Elias & Merriam, 1980).

The pragmatic philosophy of the late 19th century U.S. is the basis for progressivism. Pragmatism relies on among others, the ideas of acceptance of a multiplicity of world views, the lack of absolutes in morality, and on social reform in order to change the world in which we live. These views make up the foundation of some of the theories relating to multi-ethnicity and global perspectives such as cultural pluralism (Strouse, 1987) and some of the more radical perspectives of education (Lamy, 1983). Although the leading proponent of progressive education in this period, John Dewey, eventually retreated from the more radical social reconstructionist views of some of his colleagues, his ideas were returned to in the latter reformist period of the 1960's and 70's (Elias and Merriam, 1980).

Of particular importance to this discussion, vocational education, agricultural education, and university extension were all greatly enhanced by the progressive movement through the Smith-Hughes Act of 1917. This act allowed a practical education to become available to those who did not previously have an opportunity and greatly enhanced the prestige of the previously modest land-grant universities (Kaminsky, 1993).

The relationship of global education with the progressive educational philosophy goes, as with liberal education, to its very inception. Comenius in *Parnothosia* (Scanlon, 1960) discusses the establishment of a universal "College of Light" which will serve as an international center of education. He describes the purpose of the College of Light:

...to ensure it will nowhere among the peoples be necessary to teach anyone anything, much less that anyone should be ignorant of anything essential...to provide opportunity for the eyes of all men throughout the world to turn towards that light in which all may see the truth for themselves, and in which they will never again be able to admit errors or hallucinations. (p. 36)

He foresees the college as a kind of brotherhood of scholars from all over the world "...to extend the dominion of the human mind over things and promote the light of wisdom among all nations and minds, always for the higher and better." Thus Comenius, as an educator and the source from which the progressive education philosophy was born, had a strong international context for his thoughts. The relationship between his thought and the later relationship of the pragmatist philosophy to multi-ethnicity and global education through multiple world views, morality, and social reform show a clear global perspective in the progressive education movement. This is illustrated by Washburne (1952) when discussing the relationship of character, morals and religion to progressive education.

The circle enlarges continuously until we see nations and groups of nations which, if they work for selfish well-being at the expense of the rest of the world, plunge the world into disaster. When nations learn that they are a

part of a world society, it will not mean the individuals within the nation lose loyalty and devotion toward their own countries. It will mean that they want their own countries to work for the good of the whole so that all parts of the whole may attain the maximum good. (p. 63)

Thus progressive education has a deep-rooted connection to the teaching of a global perspective.

Behaviorism

Like progressive educational philosophy, behaviorism has grown from the scientific research model and nourished by the work of Darwin. Indeed, Darwin's theories caused philosophers to have to reexamine how to reconcile "...a new dynamic natural order of evolutionary biology to their traditional conceptions of the social and moral universe..." (O'Donnel, p. 64). It also is a product of the pragmatist philosophy and the traditions of materialism, positivism, and empiricism (Elias & Merriam, 1980).

Thus, behaviorist psychologists have attempted to pattern their studies as it relates to education on the "hard sciences" which will increase the validity of information and, therefore, the efficiency of the system. In educational terms, behaviorism generally uses a technique known as conditioning which involves the presentation of stimuli by the teacher which brings out the proper response by the student (Shermis, 1967). Behaviorism has also manifested itself in extolling the accountability of the educational system. That is, making the teachers and students accountable for what is taught and

learned in the school. This has led to the use of practices such as behavioral objectives and competency based instruction to improve communication between students and teachers so that students know what is expected of them and the school can report outcomes and compare themselves to other schools (Elias & Merriam, 1980).

Given this, it is difficult to make a connection to a global perspective in education. This confusion is in part likely due to the fact that it is a relatively young philosophy and one which has flourished primarily in the United States (Praag, 1982). Also, as a scientific and empiricist-oriented philosophy, it is ill-suited to the more ethereal global perspective ideal.

Humanism

Like the liberal educational philosophy, humanism has its roots in the traditions of ancient Greek philosophy (Elias & Merriam, 1980). But while liberal education has relied on the "classics" to teach the way to proper human existence, humanism has taken a more person-oriented approach. It relies on the experiences of human existence and the individual to find ways to live together and achieve full human potential. Thus liberal education called heavily upon the Greek tradition of more than just education but training to become truly human (Praag, 1982).

Humanism relies on much of the teaching of Aristotle, and in fact came of age during the Italian Renaissance as a literary cult renewed interest in Greek and Roman literature. Through this study they felt they would become more responsible citizens in contrast to the church dominated learning of the classics (Elias & Merriam, 1980). Humanists accepted the word of classical writers by choice, illustrating the humanist perspective of individual rights and free will and challenging the authority of the church (Praag, 1982). This eventually led to lessening the influence of the church over the majority of the population and set a precedent for future confrontation by humanists.

Confrontations between humanism and entrenched authority resurfaced in the period of Enlightenment. A resurgence of religion in the seventeenth century had counteracted the less organized and informal humanist movement. The church's retention of influence or outright control of government and on the educational systems were a formidable challenge. Humanists, with Voltaire leading the way, assaulted the hold the Church had on the intellectual choices available in the day. The assault had many practical outcomes steeped in the humanist view, but they came at a great human cost. These included causes such as freedom of speech, rejection of slavery, criminal rehabilitation and others (Bullock, 1985).

Confrontation and transformation of humanism happened once again in response to the modern movements in science and

technology. The industrial revolution brought on the advent of modern humanism to counter what humanists considered were "...forces threatening to humanity" (Elias & Merriam, p 111). This "revolution" had profound effects on society such as the mass migration to the cities, the change from an agrarian to a urban society, productivity, the accumulation of wealth, etc. (Bullock, 1985). The advent of scientific reductionism and it's incongruencies with humanism has also been a source of confrontation. Many humanists believe that advances in science and its outcome, technology, have gone unchecked and that a humanistic education would provide a proper balance with which to foresee the effects of the advances in science (Bullock, 1985). Organizations have been founded like the American Ethical Union in the late nineteenth century and eventually in 1952 The International Humanist and Ethical Union to offer students a proper moral education in place of churches.

In fact, education has long been a key to the humanistic philosophy. The lead in this respect was once again taken from the Greeks, particularly Aristotle, who saw education as the preparation to undertake the social activities that constitute life. The humanistic qualities required to undertake this were present, but had to be brought out through the educational process (Elias & Merriam, 1980, Bullock, 1985). During the renaissance, however, the universities were still dominated by the church-state apparatus so the discussion of humanism was on a more informal basis (Bullock, 1985). But some scholars in

the renaissance period, Diderot for example, called for public education along humanistic lines (Praag, 1982). Perhaps most influential was Rousseau's Emile, which discarded the notion of rote learning for the training of children's imagination and natural curiosity. Even so, the humanism of the Renaissance remained attainable only for the educated elite (Bullock, 1985).

The relation of humanism to a global perspective in education has its roots in the liberal education of ancient Greece. Humanism came into being as a philosophy in the Italian Renaissance of the fourteenth and fifteenth century, which was perhaps the most prolific period in global discovery and expansion. Thus the humanistic credo of reaching the full potential of humanity can be seen when Bullock says:

This art of empathy...is central to humanistic education and of the greatest value in breaking down the provinciality of knowing nothing about any other time or any other culture other than one's own. (p. 157)

Therefore, humanism is perhaps the quintessential educational philosophy for a global perspective in education.

Global Perspective and Higher Education

The onset of the modern movement for internationalization of curriculum began in the post World War II era and was perhaps most prominent in the late 1960's (Hick's and Townley, 1982). This era of rapid change and social turmoil led to much debate and rethinking of our attitude toward internationalization. Some of the issues faced in this period

which began to shape our perception of the interdependence of the world were rapid technological change, economic interconnectedness, and social change.

As Mauch and Spaulding (1992) pointed out, institutions of higher education are at their core universal and must be open to information from throughout the world. In addition, it means participation in exchanges and using international issues in all phases of the university. This includes the reduction of parochialism in the curriculum.

Skolnikoff (1993) notes that:

The research universities-with an important role in the training of future national leaders for the public and private sectors both in the United States and abroad-now have a central responsibility to prepare their students adequately for the global environment in which they will participate throughout their careers. (p. 226)

He goes on to identify internationalization of undergraduate education as the most important dimension of the changes required for research universities to meet future challenges. Despite the rhetoric supporting internationalization, Skolnikoff cites conflicting signs that research universities are making the required changes. He states:

The repeated calls by presidents, provosts and deans of the need for greater commitment to internationalization is itself evidence of limited progress, and bears out concern that the universities and education they provide continue to be far more parochial than the times demand. Are the structural difficulties and the specialization of the faculty so great that the conservative nature of all institutions, particularly universities, will inevitably frustrate the needed evolution? (p. 231)

Skolnikoff cites a number of barriers to the needed changes. These include the reward system of universities which are based

upon one's achievements within their specific discipline; the predominant parochial outlook of faculty in research universities; university structure which is segmented by disciplines and does not conform well to international issues which are usually interdisciplinary in nature. To overcome these impediments will require more than just the scholarly and education arguments for internationalization. It will require support of the university leadership, government, and industry as well as the strong commitment of faculty.

A further barrier to adding a global perspective in higher education is the seeming contradiction between the role of the university in advancing universal knowledge, but operate under a nation-state system that requires them to serve parochial needs (Kerr, 1990). Kerr outlines a history of internationalization of universities in a convergence, divergence, partial reconvergence model.

The first 2000 years of higher learning (beginning at about 500 B.C.) was the period of convergence. There are examples through much of history of the "utopia" of wandering scholars who could study where and what they wanted without interference from nations. During the time of Reformation, the divergence period took hold. National and religious concerns became the driving force in education which led to the advent of differing models of higher learning. The study of local rather than international languages was promoted as well as

parochialism in the study of areas such as history, literature and others.

Events have led to the present state of what Kerr refers to as partial reconvergence in what he describes as the "cosmopolitan-nation-state university". He argues that new international languages of English and math have paved the way for this transformation. This has been aided by the lessening of ideological control of universities and the advent of rapid and free communications.

Kerr goes on to argue that while this partial reconvergence stage has brought about some internationalization of the university, it is happening unevenly in different disciplines. He identified the following three categories:

- World wide uniformity in content - examples include math, science, engineering, and those disciplines which have close interaction on an international scale such as anthropology.
- Intra-cultural similarity of knowledge - examples include history and literature which are studied by civilization.
- Intra-national particularity - examples are law, public administration, education, social welfare.

The reason for these differences is explained by Kerr as a function of language, methodologies, content, and ideologies. He goes on to argue that although difficulties remain, there has generally been support from nation-states for the internationalization of learning. This has happened, generally, because it is to the advantage of nations to do so. It has been shown through the support of international

organizations which has aided the flow of information and people to solve world problems.

From all of this Kerr developed a standard he terms the "pure model" to determine to what extent a nation-state is supporting the internationalization of learning. These are:

- No secret research on campus to serve either government or corporate sponsors.
- No impediments, for political reasons, to the free flow of scholars.
- Acceptance of qualified scholars as members of the world of learning even if there is great disapproval of national policies.
- Admission of students on the basis of their academic merits and without reference to their citizenship.
- Permission to and provision of financial support for the academic community to provide a basic minimum balance among intellectual fields so that...the academic community may participate in the advancement of learning in all...areas of significance, even when they are not fields currently favored by national priorities. (p. 15)

Kerr also identifies four steps institutions can take to advance the internationalization of learning. They are to adhere to the "pure model", assist institutions in other countries to improve their ability to participate in international scholarship, provide international experiences for students and scholars to take part in education exchanges, and reform curricula.

Quantitative research on global education is rather scarce. However, a couple of studies are cited here. One was

conducted for Global Perspectives in Education, Inc. at the secondary school level (Tye & Tye, 1983). In this study a number of quantitative and qualitative methods were used to gather data from both students and teachers. Following is a summary of the significant findings:

- Neither teachers' international experience nor political orientation was significant in whether teachers would use the global education material.
- Teachers who came from families where foreign affairs were read about or discussed in the homes was a significant determinant.
- Some teachers reported that ethnocentrism of their students was a difficulty.
- People of other nations were viewed more positively than the nations themselves.
- People of other nations were seen as "not like us" except for England.

The authors conclude that much more descriptive research needed to be conducted in the field of global education.

The Council on Learning study used 3,000 undergraduate students from two and four year institutions to complete a global awareness survey (Torney-Purta, 1985). Major findings include:

- Students are unable to see the United States actions and problems from a global perspective.
- Students tended to agree with chauvinistic attitude statements about the United States.
- Important global issues included war, depletion of natural resources, and economic problems. The power to deal with global problems was attributed more to the U.S. government than international organizations.

- There is support for basic human rights.
- Most students have studied language, few have more than minimal use.

The interest and concern of global matters is superficial. According to Torney-Purta, the question left unanswered is, "Can the graduate who has begun a career maintain and update his/her global education?"

Henson, et al. (1991) conducted a study of 183 U.S. university administrators which explored a number of issues pertaining to internationalization of universities. When asked to explain a rationale for internationalization in an open-ended question, two basic common themes were identified. One was "recognize increasing global interdependence and a need for global vision" (p. 5). Global interdependence was described in economic, environmental, political, cultural, intellectual, and problem solving terms. A second basic theme was that the universities must alter their programs to better meet clientele needs.

When asked to describe the desired outcome of the internationalization process, universities identified a number of accomplishments including:

- greater global competence of students and graduates
- expanding research with international content
- an international dimension to extension and public service programs

- international competence of faculty.

The investigators utilized the quantitative portion of the mail questionnaire to ascertain and index scores to correlate for each university the degree to which a university is internationalized. The correlation was based upon activities that the universities were conducting that influenced the degree to which the universities were internationalized. Through the use of information and data collected through questionnaires, interviews and case studies, the authors went on to identify factors and sub-factors that were significant in the internationalization of universities.

"Resources" was identified as an important factor of which faculty, administrators, funds, and faculty incentive and awards were the most important sub-factors. Another important factor was program activities which included foreign students and scholars, student overseas opportunities, foreign language studies, development assistance, linkages with foreign institutions, academic programs and public service. Leadership and management was also identified as an important factor and included commitment of administrators, policy, strategic planning and review and allocation of resources. Organization and its structure, linkages to other factors and the internal culture of the institution were also important factors in the internationalization effort. Finally, the external environment was identified as an important factor. Global awareness,

stakeholder demand and perceived benefits are all important sub-factors in the external environment.

A study specific to agriculture was conducted at the University of Nebraska where 277 students in agronomy classes were surveyed to determine the knowledge and interest in international agriculture (Mason et al., 1994). The study found knowledge of international agriculture to be lacking. For the majority of the questions, less than 50 percent of the students knew the correct answer. The study also found that the greatest student interest was in agricultural concepts of the future. However, interests were clearly related to a major; agricultural economics and agri-business majors were more interested in international trade and marketing, natural resource majors more concerned with environmental issues, etc. This led the authors to conclude that a broad array of international subjects needs to be included in a course with students from a variety of majors enrolled.

Economic and Social Aspects of Global Perspective in Education

The need for internationalization of the curriculum is often justified in both social and economic terms (Bruce, 1991). In the social context international education promotes understanding and empathy among people. If people have a better understanding of why people believe and act as they do, they are more likely to be tolerant of the differences to their own beliefs and actions. This decreases tension and increases

the opportunity for thoughtful and peaceful resolution of differences.

Steven Lamy (1983) identified five world views and their effect on globalization. The idealist viewpoint supported the development of international organizations to promote peaceful conflict resolution and promote cross-cultural understanding. Education was felt to be a powerful tool in supporting this outlook. This viewpoint was particularly popular in the years between the world wars.

Geopolitical realists, on the other hand, supported an interventionist policy based on the military strength of the United States. The height of this view has been in the period since World War II. Under this viewpoint programs were initiated in area studies to increase our knowledge and ability to conduct foreign affairs in areas previously ignored.

Lamy separates the transnational viewpoint into a rather odd combination of free trade and functionalist perspectives. Free trade sees the world in terms of business and trade while functionalists opt for international cooperation to solve environmental problems and development issues. Global education for both encourages interactions through these types of activities which increases awareness and understanding.

Finally is the radical perspective of global education. This world view promotes equality and justice through the global system. Lamy contends that this perspective is rarely included in education programs.

Lamy himself supports a world view that:

...emphasizes constructive cooperation among significant actors at the local, national, and international level. Global perspectives education encourages students to find workable solutions to socioeconomic, military-security, and ecological problems which challenge the leaders and citizens of this world. (p 18)

He goes on to say that global perspectives education is to prepare students to deal with the status quo when it perpetuates violence and social inequities through changes in national and international institutions. Primarily, he says, global education can not be based on one particular world view.

Roland Case (1993) identifies substantive and perceptual dimensions of a global perspective in education. The substantive dimension "...promotes knowledge of people and places beyond students' own community and country, and knowledge of events and issues beyond the local and immediate" (p 318). Case describes five elements that one is required to understand in the substantive dimension. They are:

- Universal and cultural values and practices
- Global interconnectedness
- Present worldwide concerns and conditions
- Origins and past patterns of worldwide affairs
- Alternative future direction in worldwide affairs

The perceptual dimension "...is made up of various intellectual values, dispositions, and attitudes that distinguish an parochial perspective...from a broad-minded perspective" (p. 320). They are:

- Open-mindedness
- Anticipation of complexity
- Resistance to stereotyping
- Inclination to empathize
- Nonchauvinism

In describing these elements, Case admits that they are not value free. But rather than purporting a particular viewpoint such as Lamy (1993), the perceptual dimension supports rational reflection through an open and thorough consideration of all available information to reach a conclusion. This "implied value", Case argues, can be supported by all those who support rational reflection of issues. This can be of great use to supporters against charges of global perspective education being overly value-laden.

The economic aspect stems from individuals and nations needs to be competitive and successful in a global economy. One will have difficulty conducting business in a foreign setting without an understanding of the culture in which business is being conducted. Business people will also need a knowledge of the global economic situation as well as the economic factors of other countries in order to operate successfully.

There is a large body of work in the need for education and training for success in business and other fields. Most of this work appears in the context of human resource management

in large multinational corporations. A primary concern of many multi-national corporations (MNC's) is meeting their needs for international managers through international management development programs (Evans, 1989). One of the primary means through which this is accomplished is group management training and education (Evans, 1989).

Failure rates among managers on international assignments are high, however. Failure rates of more than half the firms surveyed by Tung (1984) reported failure rates of between 10 and 20 percent. Seven percent of the respondents had to recall managers on international assignments in 30 percent of the cases. Tung goes on to identify several problem areas in the area of human resource planning in multinationals which lead to high failure rate on overseas assignments. These are:

1. The lesser role assigned to human resource planning.
2. Faulty selection criteria for overseas assignment.
3. Failure to consider the family's ability to adjust to a foreign setting.
4. Lack of adequate training for overseas assignments.
5. The short duration of overseas assignments.
6. Faulty performance evaluation criteria.
7. The underutilization of alternative sources of human power.

Of particular interest to this study is number 4, the lack of adequate training for overseas assignments. Tung (1984) reported that in an earlier study only 32 percent of 80 US multinational firms surveyed had formalized training programs to prepare candidates for overseas work. And those that did

have training programs primarily used environmental briefings only. Tung found that more rigorous training programs improves performance of expatriates on overseas assignments and lowers the failure rate. She recommends US multinationals invest more in training programs for employees departing for overseas assignments.

A related problem area which indicates the need for international training and education is the difficulty in cultural transition in international assignments. Culture is defined by Hofstede (1984 p. 21) as "the collective programming of the mind which distinguishes the members of one human group from another." The use of a strong word like "programming" to describe culture illustrates the extreme difficulty that may be expected in overcoming cultural differences. The reason most often identified in the literature for the failure of employees to adapt to a new culture is the failure of the family to adapt (Evans, 1985; Tung, 1984). Family difficulties puts additional pressure on the employee and often can be a detriment to professional performance of the employee.

While adaptation to a new culture is often perceived to be the primary difficulty, actually it is often the re-entry process into the employee's home country that is most difficult (Evans, 1985). This goes beyond the adjustment to the home country culture and is rooted in the perception of the returning employee's skills and capabilities. Home country colleagues generally do not recognize the skill attainment of

employees returning from overseas assignments (Adler, 1981). Adler terms this embedment which she refers to as "abundant contact with home culture and lack of contact with or knowledge about foreign culture" (p. 351). This response is an indication that home country colleagues do not possess the knowledge and skills of how to value foreign work experience, or foreigners for that matter. This lack of knowledge and skill leads to the inability to infuse cross-cultural skills in the home organization.

If top management is aware of this response they can educate employees on the value of overseas experience which will ultimately benefit the company (Adler, 1981). This information indicates, then, that it is not just those employees and their families going on international assignments that need training and education in international aspects. If companies are to take advantage of the knowledge and skills attained by employees serving in overseas assignments, all employees at all levels of the organization that are involved in international activities need to gain an international perspective. Evans (1985) sites an example of this with Philips, the Dutch based multinational electronics firm. Philips considers on-the-job training and multicultural experiences as the best management development tool they provide. At Philips, job rotation is utilized to send managers to positions in other countries. This brings about a

tremendous amount of exchange of ideas and perspectives which leads to an over-all internationalization of the company.

Global Perspective and Higher Education in Agriculture

Wilkinson (1989) proposes that the university is a unique context in which a number of functions are realized. Its role is more than to perpetuate the status quo at the expense of meeting the needs of a significant portion of society. The university has an obligation to resolve problems and bring about change in a society. In this role, the U.S. university has been at the forefront in both scientific and cultural innovations that solve human problems. But the restrictive nature of contract research and a conservative value base have constrained scientists.

Wilkinson goes on to document past racial dilemma's in U.S. universities as well as note a resurgence of racial incidents today. This is particularly disturbing considering the role of the university which in Wilkinson's words is "...an organization in which students must learn to be literate and receptive to human diversity" (p. 8). Her implications in this was that faculty must take the lead in making changes to bring this about. Universities, and particularly social scientists, must "...use their scholarly and creative energies to empower and qualify students to seek solutions to the major human problems of this historical era" (p. 10). This can be accomplished by changes in curricula and cross disciplinary

efforts. Global perspective education can be described as one aspect of this effort.

There are a number of recent studies that assess the attitude of different segments of society toward international agriculture activities. Jones (1985) assessed the factors that motivate college of agriculture faculty involvement in international development activities at five Midwest land-grant universities. He found that mostly older more well-established faculty were involved in international development activities and recommended that younger faculty be encouraged to become involved and rewarded and recognized in conjunction with the involvement in international development activities. This is significant in that it points out a general failing of the university system in not rewarding international involvement in the promotion and tenure process. Disincentive for faculty involvement in international activities presents difficulty for faculty to provide a global perspective to students since the faculty has no experience themselves.

King and Martin (1993) conducted a survey of college of agriculture teaching faculty at Iowa State University in order to determine their perceptions on infusing a global perspective in College of Agriculture curriculum. However, while some teaching faculty were adding a global perspective to their instructional programs, a greater number were doing little. They also found that faculty who had international experience

and a spoke a foreign language tended to be more supportive of internationalizing the curriculum.

Elbashir (1992) surveyed Iowa young farmers to ascertain their perceptions of international agriculture in agricultural education. Elbashir discovered support among Iowa young farmers for international content in educational programs and recommended topics related to international agriculture should be taught in schools and colleges to help students obtain a global perspective in agriculture.

In a study of perceptions held by agribusiness persons in Iowa regarding the internationalization of education in agriculture, Wirth & Martin (1995) found that respondents favored the inclusion of international perspectives in educational programs. In particular, respondents felt that the areas of knowledge of world markets, marketing, and the need for more open markets was particularly important. Also considered important were crop and livestock diseases that may affect U.S. production.

Sammons (1995) surveyed Iowa State University undergraduates on a number of issues regarding the internationalization of the curriculum of the College of Agriculture. She found that students may not fully support the internationalization, particularly if more courses are required. If internationalization was undertaken by infusion of international content into existing courses, the response was more favorable.

Students also indicated that most of the courses in the College of Agriculture had little or no international content. In addition, professors' efforts to infuse a global perspective into the curriculum were inadequate. The methods used were mostly learner-passive and that a more experiential method would have greater affect. Students who participated in some form of international activity tended to agree with perception statements on the internationalization of the curriculum, although the number of students actually participating in these activities is quite low. Students identified a number of barriers to their participation in international activities including financial considerations, progress in their academic programs, and lack of information of available programs.

Summary

From this brief literature review two points become apparent. First, there has been a number of studies conducted which strongly recommend colleges of agriculture at land-grant universities become more heavily involved in a variety of aspects of international agriculture. Second, this recommendation can be justified in both social and economic/business grounds. Given these two points the following research questions come to mind:

1. To what extent do recent graduates of land-grant colleges of agriculture perceive there to be a need for globalization of curriculum.

2. What do recent graduates perceive as critical content areas for globalization of curriculum in land-grant university colleges of agriculture.

3. What are some strategies that can be used to add a global perspective to land-grant university colleges of agriculture.

CHAPTER III: METHODS AND PROCEDURES

The primary purpose of this study was to identify the perceptions held towards a global perspective in higher education in agriculture by recent graduates of selected land-grant college of agriculture programs. A secondary purpose was to generate strategies for curriculum reform that will enhance global perspective education in the college of agriculture of land-grant universities. The specific objectives include:

1. To identify selected demographic information of recent graduates of selected Midwest land-grant colleges of agriculture.
2. To identify perceptions held by recent graduates regarding adding a global perspective to curricula of selected colleges of agriculture.
3. To identify concepts and content areas critical to adding a global perspective to the study of agriculture in selected colleges of agriculture.
4. To develop a framework for curriculum enhancement to provide a global perspective in the college of agriculture of land-grant universities.

Design of the Study

The descriptive method of research design was used for this study and required the use of quantitative statistical analysis. "Descriptive statistics involve tabulating, depicting, and describing sets of data" (Hopkins, Glass and Hopkins, 1987, p.2). Based upon the tabulation, depiction and description of the data from this study, colleges of agriculture may make better informed judgments on the what and how of adding a global perspective to the curriculum.

Population and Sample

It was impossible to use all land-grant university college of agriculture graduates as the target population because of the enormous numbers involved. Therefore, the population was narrowed in a two step process. First, three midwest land-grant universities were selected for their proximity and ease of collecting data. This population was accessed through the Alumni Associations at the selected land-grant universities. These schools included Iowa State University, University of Nebraska and the University of Missouri.

Next, the target population was narrowed by using only spring semester, 1990 graduates of land-grant colleges of agriculture. The significance of selecting spring, 1990 graduates was that presumably graduates that were out of school for five years would be well established in their careers, yet recent enough to have a good recollection of the curriculum.

The Alumni Association at each school supplied the researcher with names and contact information of the graduates. There were 600 college of agriculture graduates from the three universities in the designated term of graduation. According to Kerjcie and Morgan (1970), a population size of 600 requires a sample size of 234. A random sample of 300 was selected from the total of 600 for participation in the study to increase the number of responses and for ease of random selection.

Instrumentation

The study employed a mail questionnaire to collect data. The development of the instrument was based heavily upon previous similar studies conducted at Iowa State University. The following steps were used to develop the instrument and insure validity and reliability.

1. The questionnaire was developed through a review of relevant literature, review of questionnaires used in similar studies, and input from advisors and experts.
2. Content validity was ensured through the use of an expert panel to judge the appropriateness of the instrument. This panel was made up of the investigator's graduate committee and other faculty of the Department of Agricultural Education and Studies at Iowa State University.
3. Face validity was ensured through a field test of the instrument with graduates of the College of Agriculture of Iowa State University not used in the study.
4. Reliability was tested through the internal consistency procedure to determine appropriate Cronbach's alpha scores.

One section of the instrument was devoted to measuring former graduates of colleges of agriculture perceptions regarding adding a global perspective to the curriculum of colleges of agriculture. The perceptions were measured through employment of a five point Likert-type scale with descriptors of strongly disagree, disagree, neutral, agree, strongly agree. Another section was designed to determine important content areas for adding a global perspective to college of agriculture curriculum. Another five point Likert-type scale was used, this time with descriptors of not important, of little importance, somewhat important, important, very important. The final section of the instrument collected data on select

demographic characteristics of the participants. The Iowa State University Committee on the Use of Human Subjects in Research reviewed and approved the instrument prior to its distribution.

Data Collection

Data collection was conducted through the use of a mail questionnaire. The questionnaires along with an explanatory letter were mailed to participants on December 10, 1995 and participants were asked to complete the instrument and return it by December 20, 1996. Those not wishing to take part in the survey were asked to return the blank instrument. Code numbers on each instrument were used for identification and follow-up.

Postcards were sent on January 18, 1996, to all participants who had not yet responded. As of that date 112 questionnaires (37.3%) had been returned. Following the postcard reminder another 19 were returned by March 7, 1996 that made a total of 131 or 39 percent. However, only 107 responses (35.6%) were usable. This was considered too low of a usable response rate by the researcher and his major advisor so another full mailing was sent on March 22, 1996 to those who had not yet responded. This time 35 participants responded, 29 usable for a total usable response rate of 136 or 45.3 percent. This was still considered too low of a response rate so a final full mailing was sent May 3, 1996 to those who had not yet responded. Twenty-two responses were received, 18 of

which were usable for a total of 154 usable responses (51.3%). This was considered an adequate response rate given the population and it was believed that further efforts to gain response would not be worth the time and expense.

Data Analysis

Quantitative data were compiled and coded and then analyzed using the statistical package for the social sciences (SPSS). All analyses were conducted at the Department of Agricultural Education and Studies computer laboratory. Data were analyzed to meet the objectives of the study.

The procedures used to analyze the data included:

1. Frequencies, percentages, means and standard deviations were computed for all instrument items.
2. The Cronbach alpha process was used for reliability testing.
3. Analysis of Variance was used to determine if significant differences existed based on demographic information.

Open ended questions on the instrument were grouped by important themes and their significance to the study reported.

Limitations of the Study

This study was limited to/in that:

1. Only segments of the population which graduated in May of 1990, from selected land-grant universities college of agriculture were represented.
2. The degree to which respondents interpreted, reviewed, and described their perceptions regarding the topic.
3. The results can only be generalized to those individuals that responded to the survey. Generalization to a wider group should be done with great caution.

Assumptions of the Study

The following basic assumptions were made for the purposes of this study:

1. The respondents were capable of identifying and rating those concepts and/or principles pertinent to infuse a global perspective into curriculum.
2. Accurate, objective, and unbiased responses were provided by respondents in each of the areas of the questionnaire.

CHAPTER IV: FINDINGS

The purpose of this study was to assess the perceptions of graduates of colleges of agriculture regarding adding a global perspective to the curriculum in colleges of agriculture. This chapter presents the results from the statistical analysis of data obtained from the 154 usable questionnaires that were returned. The data will be presented and discussed in the following general areas which are based on the specific objectives of the study: 1) demographic characteristics of the respondents; 2) perceptions regarding the internationalization of the curriculum in the colleges of agriculture; 3) content areas of international agriculture; and 4) international responsibilities/experiences and general comments.

Cronbach's alpha was utilized to determine the reliability of the grouped items in the instrument. For Part A, "Views on Adding a Global Perspective to Colleges of Agriculture", the alpha coefficient was found to be .84. For Part B, "Content Areas of International Agriculture", the alpha score was .95. Cronbach's alpha was also calculated for Part A and Part B and determined a coefficient of .94. A Cronbach's alpha score of greater than .80 is considered high, particularly for the behavioral measure such as Part A (Hopkins, Glass and Hopkins, 1987).

Demographic Characteristics

This section provides a description of the 154 respondents based upon gender; age; year last degree earned; university attended; highest academic degree earned; department in which they earned this degree; citizenship; number of languages spoken; amount of time spent outside their home country; whether the organization they work for conducts international activities; and whether they are involved in international activities in their job.

More than 76 percent (n=118) of the respondents were male and nearly 23 percent (n=35) were female. One respondent (.6%) did not respond to the gender item.

Table 1 presents the distribution of respondents by age. Most respondents were between the age of 20 and 29, making up 64 percent (n=99) of the respondents. Slightly more than 25 percent (n=39) were between 30 and 39 years old. Nine percent (n=14) were between the ages of 40 and 49. One respondent (.6%) was between 60 and 69 and one response (.6%) was missing.

The year respondent's earned their last degree is presented in Table 2. The questionnaire was sent to former students who were listed by their alumni association as Spring 1990 graduates. As would be expected, some former students had completed other degrees since that time so the years 1991 through 1995 are also indicated by some respondents. Rather unexpectedly, two students reported 1988 and four students reported 1989 as the year they earned their last degree. The

Table 1

Distribution of respondents by age (N=154)

Age	Frequency	Percent
20 - 29	99	64.3
30 - 39	39	25.3
40 - 49	14	9.1
50 - 59	0	0.0
60 - 69	1	.6
Missing	1	.6
Total	154	100.0

Table 2

Distribution of respondents by year they earned their last college degree (N=154)

Year of Degree	Frequency	Percent
1988	2	1.3
1989	4	2.6
1990	123	79.9
1991	1	.6
1992	6	3.9
1993	7	4.5
1994	8	5.2
1995	3	1.9
Total	154	100.0

majority of respondents earned their last degree in 1990 with 79.9 percent (n=123).

While 1990 graduates of three land-grant universities, Iowa State University, University of Missouri, Columbia and University of Nebraska, Lincoln, were sources for the study, many graduates went on to attain additional degrees from other universities after their 1990 graduation and prior to this study. Iowa State University had the most respondents with 82 (52.6%) followed by the University of Missouri with 33 (21.4%) and 29 (18.8%) for the University of Nebraska. The entire list of respondents by the university from which they earned their last degree is presented in Table 3.

Respondents were also asked to indicate the highest degree earned. The data in Table 4 represent the distribution of the respondents. Ninety-eight (63.8%) of the respondents have earned and BS/BA degree, the MS/MA degree has been earned by 27 (17.5%) of the respondents, the Ph.D/Ed.D has been earned by 24 (15.6%) and 3 (1.9%) are DVM's.

The former students were also asked to indicate the major of their last degree. Table 5 indicates the distribution of respondents by major.

When asked if they were U.S. citizens, 94.2 percent (n=145) responded yes while 5.8% (n=9) responded they were not citizens of the U.S.

The number of languages spoken by respondents is reported in Table 6. Of the respondents, 124 (80.5%) spoke one

Table 3

Distribution of respondents by the university from which they earned their last degree (N=154)

University	Frequency	Percent
Iowa State University	81	52.6
University of Missouri	33	21.4
University of Nebraska	29	18.8
Purdue University	1	.6
University of Arizona	1	.6
University of Illinois	1	.6
Oklahoma State University	2	1.3
University of Arkansas	1	.6
NW Missouri State University	1	.6
Texas A & M University	2	1.3
University of California, Davis	1	.6
University of Iowa	1	.6
Total	154	100.0

Table 4

Distribution of respondents by highest degree earned (N=154)

Highest Degree	Frequency	Percent
BS/BA	98	63.6
MS/MA	27	17.5
Ph.D/Ed.D	24	15.6
DVM	3	1.9
Missing	2	1.3
Total	154	100.0

language, 22 (14.3%) spoke two languages, 5 (3.2%) spoke three languages and 3 (1.9%) spoke 4 or more languages.

Over half of the respondents (51.3%, n=79) reported they worked for businesses. Twenty-five percent (n=39) worked for an educational institution i.e. a local school, college or university. Other organizations reported as employers were local, state or federal government (12.3%, n=19); farms (4.5%, n=7); non-profit organizations (3.9%, n=6). Data for type of employer can be found in Table 7.

Job titles of respondents are presented in Table 8. Because of the large diversity of responses to this item, some of the job titles listed by respondents have been grouped by the researcher for analytical purposes. For example, managers includes management personnel at many levels of an organization

Table 5

Distribution of respondents by major of last degree (N=154)

Major	Frequency	Percent
Econ/Ag Business	41	26.6
Agronomy	14	9.1
Animal Ecology	7	4.5
Food Technology	11	7.1
Finance	1	.6
Entomology	3	1.9
Agricultural Education	17	11.0
Animal Science	22	14.3
Zoology	2	1.3
Dairy Science	2	1.3
Plant Pathology	1	.6
Microbiology	3	1.9
Veterinary Medicine	4	2.6
Biochemistry	3	1.9
Educational Administration	1	.6
Meat Science	1	.6
Rural Sociology	1	.6
General Agriculture	4	2.6
Agricultural Engineering	5	3.2

Table 5 (continued)

Natural Resource Management	1	.6
Agricultural Meteorology	1	.6
Pre-Medicine	1	.6
Hotel and Restaurant Mgmt	1	.6
Communications	1	.6
Horticulture	2	1.3
PSA	1	.6
Genetics	1	.6
Missing	2	1.3
Total	154	100.0

Table 6

Distribution of respondents by number of languages spoken
(N=154)

Languages Spoken	Frequency	Percent
1	124	80.5
2	22	14.3
3	5	3.2
4 or more	3	1.9
Total	154	100.0

Table 7

Distribution of respondents by type of employer (N=154)

Employer	Frequency	Percent
Business	79	51.3
School, College, University	39	25.3
Non-profit	6	3.9
Government	19	12.3
Farm	7	4.5
Other	1	.6
Missing	3	1.9
Total	154	100.0

as well as from a number of different kinds of organizations.

When asked how long they had worked for the organization, 101 (65.6%) responded 0 to 5 years. Thirty nine (25.3%) said 6 to 10 years. The length of time respondents worked for their employer is presented in Table 9.

Data on the amount of time graduates have spent outside the United States is presented in Table 10. Over one-third (n=52) responded that they had never left the U.S. and 37.7 percent (n=58) said they had been outside of the country for less than one month. Twenty-two (14.3%) had been out of the country for 1 to 6 months. Slightly more than 10 percent (n=16) had been outside of the U.S. for more than 2 years.

Table 8

Distribution of respondents by job title (N=154)

Job Title	Frequency	Percent
Manager	33	21.4
Researcher /Scientist	27	17.5
Technician	11	7.1
Extension	6	3.9
Owner	7	4.5
Sales/Marketing	11	7.1
Graduate Student/Assistant	9	5.8
Secretary /Administration	8	5.2
Veterinarian	3	1.9
Communications	3	1.9
Professor	6	3.9
Fireman	1	.6
Farmer	5	3.2
Teacher	8	5.2
Country Director	1	.6
Agricultural Attaché	1	.6
Banker	4	2.6
Post Doctorate	2	1.3
Missing	8	5.2
Total	154	100.0

Table 9

Distribution of respondents by number of years worked for the organization (N=154)

Years	Frequency	Percent
0 - 5 years	101	65.6
6 - 10 years	39	25.3
Missing	14	19.1
Total	154	100.0

Table 10

Distribution of respondents by amount of time spent outside the U.S. (N=154)

Time Outside U.S.	Frequency	Percent
Never	52	33.8
Less than one month	58	37.7
One to six months	22	14.3
Seven months to one year	4	2.6
One to two years	2	1.3
More than two years	16	10.4
Total	154	100.0

A majority of the graduates (68.8%) reported that the organizations they worked for conducted some type of international activity. In addition nearly half of the respondents (45.5) reported that they were involved in some sort of international activity in their jobs.

Student Perceptions Regarding Adding a Global Perspective to Colleges of Agriculture

A five point, Likert-type scale was used to measure graduates perceptions regarding adding a global perspective to the curriculum of colleges of agriculture. The graduates were asked to circle the appropriate letter which corresponded with the appropriate scale descriptors which included strongly disagree, disagree, neutral, agree, strongly agree. It was established *a priori* that a mean rating of 3.50 or higher indicated agreement with a perception statement while a response of 2.50 or lower indicated disagreement. Table 11 provides information on responses for all items in the perception scale.

The perception statement with the highest mean score (mean = 4.10) was "Experiences in other countries will change attitudes of students toward other countries". Other perception statements that received high mean scores were: "The college of agriculture should provide students with a greater awareness of international issues in agriculture" (mean= 4.04), "The curriculum of the college of agriculture should reflect a respect and knowledge of the global

Table 11

Means, modes and standard deviations of perception statements regarding adding a global perspective to the curricula of colleges of agriculture as reported by COA graduates of selected land-grant universities (N=154)

Perception Statements	N	Mean	Mode	SD
Experiences in other countries will change attitudes of students towards other countries.	154	4.10	4.00	.846
The college of agriculture should provide students with a greater awareness of international issues in agriculture.	154	4.04	4.00	.778
The curriculum of the college of agriculture should reflect a respect and knowledge of the global community.	154	4.00	4.00	.676
It is important that college of agriculture graduates have an understanding of agricultural systems of other countries.	154	3.88	4.00	.811
I would encourage undergraduate students in colleges of agriculture to take part in international opportunity programs.	154	3.85	4.00	.877
Increasing awareness of the U.S. involvement in international agriculture is an important goal of the college of agriculture curricula.	154	3.77	4.00	.744
The college of agriculture should encourage students to participate in international internship programs.	154	3.66	4.00	.744

Table 11 (continued)

College of agriculture students need a background of international knowledge in order to develop skills and practices that are more compatible to a global perspective.	154	3.64	4.00	.845
The college of agriculture should offer more international experiences for students.	154	3.63	4.00	.816
Global perspective education will improve job opportunities for college of agriculture graduates.	154	3.60	4.00	.843
Increasing students' awareness and skills in dealing with a global environment will help graduates gain employment.	154	3.58	4.00	.748
It is a good idea for college of agriculture undergraduates to take part in an international experience program.	154	3.53	4.00	.865
Having a global perspective will enhance a graduate's ability to solve problems in his/her work.	154	3.50	4.00	.958
Global perspective education will improve job opportunities.	154	3.45	4.00	.879
Understanding international issues in agriculture helps a graduate of a college of agriculture gain employment.	154	3.38	4.00	.880
Opportunities for students to gain knowledge and perspective about global inter-dependencies should be taught in courses other than those in the college of agric.	154	3.35	4.00	.867

Table 11 (continued)

International experience is an important component of a land-grant education in today's society.	154	3.34	4.00	.951
The college of agriculture should have a global awareness course requirement.	154	3.30	4.00	1.030
Speaking a foreign language will help college of agriculture graduates gain employment.	154	3.20	4.00	.966
Opportunities to help students to gain experiences in other cultures should be funded by colleges of agriculture.	154	3.05	4.00	.975
The college of agriculture should have a foreign language requirement.	154	2.76	2.00	1.194
Adding a global perspective to college of agriculture curricula will not help graduates gain employment.	154	2.51	2.00	.916
College of agriculture curricula should promote the United States' perspective rather than an awareness of other countries' perspectives.	153	2.51	2.00	1.020
College of agriculture curricula should promote the United States perspective rather than help students develop skills and practices that would be compatible on a global scale.	153	2.30	2.00	.987
College of agriculture students need to have completed an international experience before graduation.	154	2.27	2.00	.929

Table 11 (continued)

There is no need to assist students to develop a global perspective in agriculture since this is provided elsewhere in the university	154	2.21	2.00	.822
When I was an undergraduate in the college of agriculture, I was involved in international activities.	151	2.13	2.00	1.054
College of agriculture students should be exposed to alternative viewpoints.	154	1.70	2.00	.793

Scale: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

community (mean = 4.00), "It is important that college of agriculture graduates have an understanding of agricultural systems of other countries" (mean = 3.88), "I would encourage undergraduate students in colleges of agriculture to take part in international opportunity programs" (mean = 3.85), "Increasing awareness of the U.S. involvement in international agriculture is an important goal of the college of agriculture curricula" (mean = 3.77), "The college of agriculture should encourage students to participate in international internship programs" (mean = 3.66), "College of agriculture students need a background of international knowledge in order to develop skills and practices that are more compatible to a global perspective" (mean = 3.64), "The college of agriculture should offer more international experiences for students (mean = 3.63), "Global perspective education will improve job

opportunities for college of agriculture graduates" (mean = 3.60), "Increasing students' awareness and skills in dealing with a global environment will help graduates gain employment" (mean = 3.578), "It is a good idea for college of agriculture undergraduates to take part in an international experience program" (mean = 3.53), and "Having a global perspective will enhance a graduate's ability to solve problems in his/her work" (mean = 3.50).

Perception statements that respondents showed a high level of disagreement with were: "College of agriculture students should not be exposed to alternative viewpoints" (mean = 1.70), "When I was an undergraduate in the college of agriculture, I was involved in international activities" (mean = 2.13), "There is no need to assist students to develop a global perspective in agriculture since this is provided elsewhere in the university" (mean = 2.21), "College of agriculture students need to have completed an international experience before graduation" (mean = 2.27), and "College of agriculture curricula should promote the United States perspective rather than help students develop skills and practices that would be compatible on a global scale" (mean = 2.30).

Analysis of Variance

Respondents were grouped using demographic data according to the following variables: age, gender, year of last degree,

university of last degree, highest degree, department, citizenship, languages spoken, length of time spent outside the U.S., type of organization worked for, organization involved in international activities, job title, years worked for organization, and whether personally involved in international activities. The group data were then compared to a composite mean score ($\bar{M}=3.47$) for the perception scale. The level of significance for all tests was set a priori at .05.

Analysis of variance indicated a significant difference among respondents when grouped by age and analyzed with perception variables (Table 12). A post hoc multiple comparison test was performed to determine whether differences between pairs of means was the reason for the significant F-ratio. Pair-wise comparisons were made using the Tukey Method

Table 12

Analysis of variance regarding perceptions on adding a global perspective to curriculum of colleges of agriculture by age of recent graduates of selected colleges of agriculture (N=154)

Age	n	Mean	F-ratio
20 - 29a	98	3.35	
30 - 39	35	3.60	
40 - 49a	14	3.93	
50 - 59	0	0.00	
60 - 69	1	3.75	5.91*

* $p < .05$.

(a) denotes pairs of groups significantly different at the .05 level.

or HSD (honestly significant difference). The error rate was maintained at the previously established level of .05.

Respondents in the age group of 40 to 49 years old ($M=3.93$) were significantly different from those in the age group 20 to 29 ($M=3.35$) when analyzed with their perceptions regarding adding a global perspective to curriculum of colleges of agriculture. It can be concluded that 40 to 49 year olds tended to agree more than 20 to 29 year olds with the perception statements regarding adding a global perspective to curriculum of colleges of agriculture.

T-test results indicated a significant difference among respondents when grouped by gender (Table 13). The perception mean rating by female respondents was 3.62 and the mean rating for males was 3.42. It can be concluded, then, that female respondents tended to agree with perception statements about adding a global perspective to curriculum than did male respondents.

Table 13

Gender differences in perceptions regarding adding a global perspective to college of agriculture curriculum as reported by former students of selected universities (N=154)

Gender	n	Mean	SD	t-value
Female	35	3.62	.563	
Male	113	3.42	.553	1.87*

* $p < .05$, two-tailed

Analysis of variance indicated no significant difference among respondents when grouped by the universities from which they received their last degree and analyzed with the perception scale. It can be concluded that the university from which respondents received their last degree did not influence their perceptions regarding adding a global perspective to college of agriculture curriculum.

Analysis of variance indicated a significant difference among respondents when grouped by highest degree obtained and analyzed with the perception scale (Table 14). The Tukey analysis indicated that a significant difference exists that respondents with the Ph.D. degree ($\bar{M}=3.82$) were significantly different from those with a B.S./B.A. degree ($\bar{M}=3.39$). Therefore, it can be concluded that respondents with a

Table 14

Analysis of variance regarding perceptions on adding a global perspective to curriculum of colleges of agriculture by highest degree obtained of recent graduates of selected colleges of agriculture (N=154)

Degree	n	Mean	F-ratio
B.S./B.A. (a)	97	3.39	
M.S./M.A.	26	3.52	
Ph.D. (a)	21	3.82	
DVM	3	3.56	4.10*

* $p < .05$.

(a) denotes pairs of groups significantly different at the .05 level.

doctorate degree tended to agree more with perception statements about adding a global perspective to college of agriculture curriculum than those with bachelor's degrees.

Analysis of variance indicated no significant difference among the respondents when grouped by the department of their major and analyzed with the perception data. Therefore, it can be concluded that respondents' major did not influence their perceptions regarding adding a global perspective to curriculum of colleges of agriculture.

T-test results indicated a significant difference among respondents when grouped by citizenship (Table 15). United States citizens perception mean rating score was 3.44 while respondents with citizenship in another country had a score of 3.99. Therefore, it can be concluded that respondents with citizenship in a country other than the United States tended to agree more with perception statements regarding adding a global perspective to curriculum of colleges of agriculture.

Table 15

Citizenship differences in perceptions regarding adding a global perspective to college of agriculture curriculum as reported by former students of selected universities (N=154)

Group	n	Mean	SD	t-value
U.S. citizens	141	3.44	.555	
Not U.S. citizens	8	3.99	.299	-2.79*

* $p < .05$, two-tailed.

Analysis of variance indicates a significant difference among respondents when grouped by number of languages spoken and analyzed with the perspective variables (Table 16). The Tukey method found that respondents who speak two languages ($\bar{M}=3.76$) were found to be significantly different from those who speak one language ($\bar{M}=3.38$). From this it can be concluded that those who speak two languages tended to agree more than those who speak just one language with the perception statements about adding a global perspective to curriculum in colleges of agriculture.

Analysis of variance indicates a significant difference among respondents when grouped by the amount of time spent outside the United States and analyzed with the data from the

Table 16

Analysis of variance regarding perceptions on adding a global perspective to curriculum of colleges of agriculture by number of languages spoken by recent graduates of selected colleges of agriculture (N=154)

Number of Languages Spoken	n	Mean	F-ratio
One(a)	120	3.38	
Two(a)	21	3.76	
Three	5	3.95	
Four or more	3	3.94	5.28*

* $p < .05$.

(a) denotes pairs of groups significantly different at the .05 level.

perception scale (Table 17). Based on the finding of the Tukey procedure, respondents who spent one to six months ($M=3.77$), more than two years ($M=3.95$), and one year to two years ($M=4.27$) outside the United States differed significantly from those that have spent no time outside the U.S. ($M=3.20$). In addition, respondents who have spent more than two years outside the United States ($M=3.95$) were significantly different from those that spent less than one month outside the U.S. ($M=3.41$). It can be concluded that respondents who have spent greater amounts of time outside the United States tended to agree more with the perceptions statements about adding a global perspective to curriculum of colleges of agriculture

Table 17

Analysis of variance regarding perceptions on adding a global perspective to curriculum of colleges of agriculture by time spent outside of the United States(N=154)

Time	n	Mean	F-ratio
None(a,b,c)	51	3.20	
Less than one month(d)	56	3.41	
One month to six months(a)	22	3.78	
Seven months to one year	3	3.73	
One year to two years(b)	2	4.27	
More than two years(c,d)	15	3.95	8.78*

* $p < .05$.

(a,b,c,d) denotes pairs of groups significantly different at the .05 level.

than those that have spend little or no time outside the United States. Analysis of variance indicated no significant differences among the respondents when grouped by type of organization worked for and analyzed with the perception scale data. Therefore, it can be concluded that the type of organization the respondents work for did not affect their perceptions of adding a global perspective to college of agriculture curriculum.

T-test results indicated a significant difference in perceptions among respondents who worked for organizations that conduct international activities and those that do not (Table 18). The perception mean rating for respondents who had worked for an organization that conducted international activities was 3.62 and for those who did not, 3.08. It can be concluded that respondents who worked for organizations that conduct

Table 18

Differences of whether respondents organizations conduct international activities in perceptions regarding adding a global perspective to college of agriculture curriculum as reported by former students of selected universities (N=154)

Group	n	Mean	SD	t-value
Conduct international activities	102	3.62	.468	
Do not conduct international activities	43	3.08	.589	5.92*

* $p < .05$, two-tailed.

international activities tend to agree more with the perception statements than those who did not.

T-test results indicated a significant difference among respondents who were involved in international activities in their job and those who were not (Table 19). The perception mean rating for respondents who were involved in international activities in their job was 3.69 and 3.29 for those who were not. It can be concluded that respondents who are involved in international activities in their jobs tended to agree more with perception statements regarding adding a global perspective to curriculum than those who did not.

Table 19

Differences of whether respondents are involved in international activities in their job in perceptions regarding adding a global perspective to college of agriculture curriculum as reported by former students of selected universities (N=154)

Group	n	Mean	SD	t-value
Involved in international activities	66	3.69	.483	
Not involved in international activities	77	3.29	.534	4.57*

*p < .05, two-tailed.

Content Areas of International Agriculture

A five point, Likert-type scale was used to measure graduates views on the importance of content areas to the general education of students in colleges of agriculture. The graduates were asked to circle the letter which corresponded with the appropriate scale descriptors which included not important, of little importance, somewhat important, important, and very important. It was established *a priori* that a mean rating of 3.5 or higher indicated importance of a concept area while a response of 2.5 or lower indicated the content area was not important. Table 20 provides information on responses for all items in the perception scale.

A total of 16 out of possible 26 content areas were considered important. Of particular importance to graduates were: "Foreign government trade policies" (mean = 4.13), "Consumer food preferences in other countries" (mean = 4.06), "International trade relations" (mean = 4.02).

No content areas were below the *a priori* rating of 2.5. The lowest rated content areas were "Use of animal power in other countries' agriculture" (mean = 2.80) and "Women's involvement in agriculture in other countries" (mean = 2.97).

Respondents were asked to add any content areas they felt were important that were not included in the scale. They suggested more than 60 additional content areas as well as making general comments about international agriculture. The

Table 20

Means, modes and standard deviations of international agriculture content areas, the knowledge of which is important to the general education of students in colleges of agriculture (N = 154)

Content Areas	N	Mean	Mode	SD
Foreign government trade policies	154	4.13	4.00	.822
Consumer food preferences in other countries	154	4.06	4.00	1.030
International trade relations	154	4.02	4.00	.812
International marketing systems	154	3.95	4.00	.858
Dietary preferences in other countries	154	3.93	4.00	1.029
Foreign government regulations	154	3.90	4.00	.951
Use of agricultural technology in other countries	154	3.82	4.00	.918
Social impact of agriculture in other countries	154	3.75	4.00	.987
Business management practices in other countries	154	3.72	4.00	.845
Food technology and processing in other countries	154	3.71	4.00	.885
Business practices in other countries	153	3.67	4.00	.910
Livestock production practices in other countries	154	3.66	4.00	.944
Environmental practices of other countries	154	3.66	4.00	.895
Farm management practices in other countries	154	3.60	4.00	1.006

Table 20 (continued)

Transportation systems in other countries	154	3.53	4.00	.916
Communication systems in other countries	154	3.51	4.00	.985
Crop production practices in other countries	154	3.47	4.00	1.017
Cultural practices in other countries	154	3.44	4.00	.905
Dairy production in other countries	154	3.36	4.00	.898
Interpersonal communications in other countries	154	3.34	4.00	1.063
Foreign languages	154	3.24	3.00	1.036
Forestry practices in other countries	153	3.19	3.00	.894
Extension systems in other countries	154	3.08	3.00	.994
Education systems of other countries	153	3.00	3.00	.987
Women's involvement in agriculture in other countries	154	2.97	2.00	1.009
Use of animal power in other countries	154	2.80	2.00	.977

Scale: 5 = very important, 4 = important, 3 = somewhat important, 2 = of little importance, 1 = not important

suggested content areas ranged from the typical content areas of crops, livestock, economics, trade, etc. to more distinctive areas such as cultural practices, religion, and others. A full list of the suggested content areas can be found in Appendix D.

International Responsibilities/Experiences and General Comments

The final two items on the survey were open ended questions. The first asked participants to describe their international responsibilities and experiences. For purposes of this study, the responses have been categorized according to the type of responsibilities and experiences. The most common categorization (27 respondents) can be summarized as those whose jobs require them to have, at least at some time, a high level of involvement in the exchange of goods and services in an international setting. This ranges from those who are involved on a day to day basis in international sales and marketing to those who sometimes work with the international division of their company or interact with foreign companies directly. Some travel internationally and have a high level of interaction with foreign nationals.

The next most common category is in the realm of research and education (14 respondents). The most common theme in this category was interaction through joint research or between professor/teacher and student. Another 11 respondents had what could be termed "incidental" international experiences. This included activities such as visiting foreign countries and other minor involvement's. Several respondents reported that while they had minor involvement now it was planned that their level of involvement would increase in the future.

Eight respondents reported that they worked or interacted with someone from a country other than the United States.

Another seven respondents were involved in exchanges or gave tours to foreign visitors. Five respondents had worked/resided in another country. A complete list of respondents comments can be found in Appendix D.

The final item on the survey offered respondents the opportunity to make any additional comments on adding a global perspective to the curriculum of colleges of agriculture. The most common response was positive towards the subject (39 instances). Many cited the economic importance of global perspective education in U.S. competitiveness in the global economy. Others cited social and environmental issues as a reason for support for global perspective education in colleges of agriculture.

The next most common theme was a generally positive outlook but that global perspective education should not be required (20 instances). This type of response ranged from having some courses available to all students to have global perspective courses as electives that students can choose. Many of the respondents noted that they believed there were already too many required courses for students and were opposed to adding more.

Six respondents had clearly negative comments regarding adding a global perspective to college of agriculture curriculum. A final theme was that there was already enough of a global perspective in curriculum or that the emphasis

should be very limited (4 instances). A complete list of respondents comments can be found in Appendix D.

Summary

Analysis of the data indicates that former students held generally positive attitudes towards many of the perception statements regarding adding a global perspective to curriculum of colleges of agriculture. The data also indicated many content areas that respondents considered important to providing a global perspective in agricultural curriculum at the university level.

Demographic information collected was quite interesting as well. Perhaps the two most interesting statistics were that nearly 70 percent of respondents reported they worked for an organization that conducted some type of international activity. In addition, over 45 percent stated they were involved in some type of international activity in their work.

Demographic characteristics also impacted on respondents perceptions regarding adding a global perspective to curriculum of colleges of agriculture. Some of the most significant differences included: respondents with a Ph.D. tended to agree more than those with a B.S./B.A, non-U.S. citizens tended to agree more than U.S. citizens, respondents who spoke two languages tended to agree more than those who speak one language, those who have spent time outside of the United States tend to agree more than those who have spent no time

outside of the United States, respondents who worked for organizations that conduct international activities tended to have a higher level of agreement than those who worked for organizations that did not conduct international activities, and those who were involved in international activities tended to agree more than those who were not involved in international activities.

CHAPTER V: DISCUSSION

The purpose of this study was to assess the perceptions of recent graduates of colleges of agriculture regarding adding a global perspective to curriculum in colleges of agriculture. No previous studies on this subject and with this population were found in the review of literature. This chapter further explores the findings of the study. This will be done in the context of the objectives of the study which were to 1) to identify selected demographic information of recent graduates of selected midwest U.S. land-grant colleges of agriculture, 2) to identify perceptions held by recent graduates regarding adding a global perspective to curriculum of selected colleges of agriculture, 3) to identify concepts and content areas critical to adding a global perspective to the study of agriculture in selected colleges of agriculture, 4) To develop a framework for curriculum enhancement to provide a global perspective in the college of agriculture of land-grant universities.

Demographic Information

The first objective of the study was to identify demographic information of recent graduates of colleges of agriculture of three land-grant universities. The respondents in the study were primarily male (76 percent). As expected given the graduation date of five years ago, the majority of the respondents were in the 20 to 29 year old category (64.3

percent). Perhaps surprisingly 25.3 percent were 30 to 39 years old and just over 9 percent were in the 40 to 49 years old range. This can be explained mostly by the fact that the population included graduates of Spring, 1990, at all levels including bachelors, masters, and Ph.D.

Graduates of Iowa State University had the most respondents with 52.6 percent followed by the University of Missouri with 21.4 percent and the University of Nebraska with 18.8 percent. This is roughly in ratio with the number of graduates in the population of each university. A number of other universities were listed as the place where respondents' last degree was earned reflecting the fact that a number of students went on to graduate school at other institutions. Regarding degrees earned, 63.6 percent of respondents had earned a bachelors degree, 17.5 percent a masters, 15.9 percent a Ph.D. and 1.9 percent a DVM.

Not surprisingly, only 19.4 percent of the respondents spoke more than one language. When one considers that 5.8 percent of respondents were not U.S. citizens and were likely to speak English as a second language and therefore probably not part of the 19.4 percent who speak more than one language, the number of U.S. citizens who speak more than one language is likely less than 19.4 percent. And this does not take into account those respondents who may have been naturalized citizens who likely spoke more than one language which would lower the percentage even further for native born Americans.

Relatedly, 33.8 percent of respondents had never been outside the United States and 37.7 percent had been outside the United States for less than one month. Therefore, a total of 71.5 percent of respondents had either not been out of the United States at all or had been out of the U.S. for less than one month. This in combination with the low percentage of respondents who spoke more than one language is significant.

A large majority of the respondents (68.8 percent) reported that the organizations they worked for conduct some type of international activity. And 45.5 percent reported that they were involved in some sort of international activity in their jobs. This is in sharp contrast with the above mentioned data. So while over two-thirds of the respondents work for an organization that conducts international activities and nearly half were personally involved in those activities, less than one quarter of respondents spoke more than one language and nearly three quarters had been outside the U.S. for less than one month, if at all. This suggests that the respondents do not possess some of the skills and experiences which match the needs of their employers. Credence to this notion is added by Dale, et. al. (1997) which found that over 90 percent of Iowa agribusinesses had at least some employees involved in, and some of their revenue and sales derived from, international business activities. In addition, almost 40 percent of the agribusinesses replied that they foresee a need in language training for employees in the next five years.

Graduate Perceptions

Graduate's responses to perception statements regarding adding a global perspective to the curriculum of colleges of agriculture were generally positive. Statements having to do with international experiences had particularly positive responses. This included the item receiving the highest mean rating (4.10), "Experiences in other countries will change attitudes of students toward other countries". The statement "I would encourage undergraduate students in colleges of agriculture to take part in international opportunity programs" received a mean score of 3.85. An additional three perception statements relating to international experience received positive ratings by respondents. A contradictory mean score (2.27) was received for the statement, "College of agriculture students need to have completed an international experience before graduation". But this may be a reaction to the wording of the question which may suggest a move to require an international experience. Increased requirements was something which was found not to be favored in this study and by Sammons (1995). Nevertheless, there is an indication that graduates believe international experiences are important and should be offered and promoted in the college of agriculture curriculum.

Respondents also tended to have generally positive responses to statements regarding the need for international knowledge about agriculture. "The college of agriculture should provide students with greater awareness of international

issues in agriculture" received a mean score of 4.04. Also highly rated were the statements, "it is important that college of agriculture graduates have an understanding of agricultural systems of other countries" (3.88) and "increasing awareness of the U.S. involvement in international agriculture is an important goal of the college of agriculture curricula" (3.77).

A more social view of a global perspective in the college of agriculture curriculum was also supported. The statement, "The curriculum of the college of agriculture should reflect a respect and knowledge of the global community" received a mean score of 4.00 while the statement, "College of agriculture students need a background of international knowledge in order to develop skills and practices that are more compatible to a global perspective" received a mean score of 3.64.

Respondents tended to be neutral on the effect a global perspective in the curriculum of colleges of agriculture would have in assisting graduates in gaining employment. While two statements were slightly into the agree range, several others were in the neutral range. Also in the neutral range were statements on a global awareness course and a foreign language requirement. This is an indication of reluctance of graduates to support increased course requirements, although perhaps not as vehement as Sammons (1995) study of students' perspectives.

Significant statistical relationships were found on the perception scale when respondents were grouped by demographic characteristics. Respondents who were between 40 and 49 years

old tended to agree more with the perception statements than did those in the 20 to 29 years old range. However, it was also found that respondents whose highest degree was the Ph.D. tended to have a higher level of agreement with the perception statements than those with bachelors degrees. Therefore, the higher level of agreement of respondents between 40 and 49 over those 20 to 29 may be as much a function of level of education as age and vice-versa. This is true because given the parameters of the study it is more likely that those in the 40 to 49 years old range have higher degrees than those 20 to 29 years old.

Women were more in agreement with the perception statements than males and non-U.S. citizens tended to have a higher level of agreement than U.S. citizens. The latter finding is somewhat expected given the fact that they had chosen to study in a foreign country (U.S.) and therefore would likely have a more global perspective based upon their experience.

Those respondents who spoke two languages had a higher level of agreement with the perception statements than those who spoke only one language. Generally, it can also be said that those who had spent greater amounts of time outside the United States tended to agree more with the perception statements than those who had spent little or no time. This is in line with the findings of King (1991) and Sammons (1995) and add further credence to the notion that the number of languages

spoken and time spent outside the United States are critical factors to one's view of a global perspective in college of agriculture curriculum. Similarly, respondents who worked for organizations that conducted international activities and those who were involved in international activities in their job were also likely to have a higher agreement with the perception statements than those who did not work for an organization with international activities or those who were involved in international activities in their job.

Content Areas

The data indicates that most of the content areas included in this section were considered to be important by respondents. Of particular importance were "Foreign government trade policies" with a mean of 4.13, "Consumer food preferences in other countries" with a mean of 4.06 and "International trade relations" with a mean of 4.02. Not surprisingly, those content areas that were consistently highly related tended to have a common thread of being advantageous to foreign sales of U.S. products, although some technical areas were also highly rated.

The lowest rated items were "Use of animal agriculture in other countries' agriculture" and "Women's involvement in agriculture in other countries" with means of 2.80 and 2.97 respectively. Generally, lower mean scores were attributed to more social science based content areas such as "Extension

systems in other countries" (mean = 3.08); "Foreign languages" (mean = 3.24); "Interpersonal communications in other countries" (mean = 3.34); and "Cultural practices in other countries" (mean = 3.44). However, the content area "Social impact of agriculture in other countries" received a relatively high mean score of 3.75.

Generally, it may be concluded that respondents tended to be more supportive of a global perspective in economic and technical content areas than in more socially oriented content areas, with some exceptions. This may be an indication that respondents believe the global perspective content level in social science topics in agriculture is already sufficient. It might also, however, be an indication that graduates of colleges of agriculture are more strongly oriented to the economic and technical aspects of global perspective education in agriculture and know little of the social aspects of agriculture.

A Framework for Adding a Global Perspective

The final objective of this study was how to go about adding a global perspective education to the college of agriculture curriculum. This section will attempt to fulfill this important objective by incorporating the findings of this study with information from previous studies and other related literature. The information will be presented in order to guide the process of adding a global perspective to college of

agriculture curriculum. As a process, there is no definable start and end point. Adding a global perspective to the college of agriculture curriculum will require implementing a number of activities and actions simultaneously.

There is significant evidence that a strengthening of global perspective education is generally needed at the university level. A Council of Learning (Tye and Tye, 1983) study found that undergraduate students from two and four year colleges had a superficial interest in and concern for global matters. Henson, et al. (1991) found support for internationalization of the university curriculum among administrators of 183 U.S. universities.

At the college level, there are similar indications. A study of students in an agronomy class at the University of Nebraska found that while there was interest in some aspects of international agriculture, general knowledge of international agriculture was lacking (Mason, et al. 1994). A 1991 study conducted by King found that college of agriculture teaching faculty at Iowa State University believed internationalization of the curriculum is important and at least some were adding a global perspective. A 1995 study by Sammons also conducted at Iowa State University indicated that college of agriculture students also supported internationalization of college of agriculture curriculum. They also recognized that some teaching faculty were attempting to incorporate a global perspective in their classes but usually through teaching

methods in which students were passive listeners rather than active participants. A study of Iowa agribusiness areas of international business needs for Iowa agribusinesses in the next five years found many topics which are important including leads about trading opportunities and language training (Dale, et al., 1997). Another study of Iowa agribusiness also indicated support for the internationalization of the college of agriculture curriculum (Wirth and Martin, 1995) as did this study of recent graduates of three land-grant university colleges of agriculture. Therefore, there is apparent need, and broad-based support for adding a global perspective to curriculum of colleges of agriculture.

Before the process of adding a global perspective to the college of agriculture can be described, there must first be a clear understanding of what is meant by "global perspective". Another similar term often used is internationalization. This term has been used in this study when it was used by other authors being cited. However, this study differentiates the two significantly. Henson et al. (1991, p. 2) defined internationalization as: "the incorporation of international contents, materials, activities, and understandings into the teaching, research, and public service functions of universities to enhance their relevance in an interdependent world." This rather functional definition presents internationalization as the inputs of a number of factors into the three functions of the university to make the university

more relevant. But it is not just the university's role to make itself relevant to present conditions. This notion connotes a reactionary element in higher education today. To truly meet its obligation to society, higher education must regain the leadership role in setting the direction of thought and discussion of scientific and social issues.

Global perspective education, then, while certainly incorporating part of the idea of internationalization, takes a more holistic approach and combines the definitions of global education and global perspective which were presented in Chapter I. For the purpose of this study, global perspective education is the process through which people acquire the understanding, knowledge, and appreciation of world cultures, human diversity and international systems, and through this understanding, knowledge and appreciation they will be able to understand the interdependence of the world, be aware of one's influence on international systems, and act to positively influence the systems. The purpose of this discussion is to establish a framework through which this can be done in colleges of agriculture.

This study built upon a model of internationalization for universities which was presented by Henson, et al. (1991). Their study was based upon data collected from questionnaires to universities and interviews with administrators. From this, factors and sub-factors which support internationalization were

identified. From this information Henson, et al. developed a model of internationalization (Figure 1).

The cube has as its X-axis degree of internationalization and Y-axis those factors which are significant in bringing about internationalization. The "how" of internationalization is described as an interaction of, and interrelationships between the factors. However, the how of internationalization

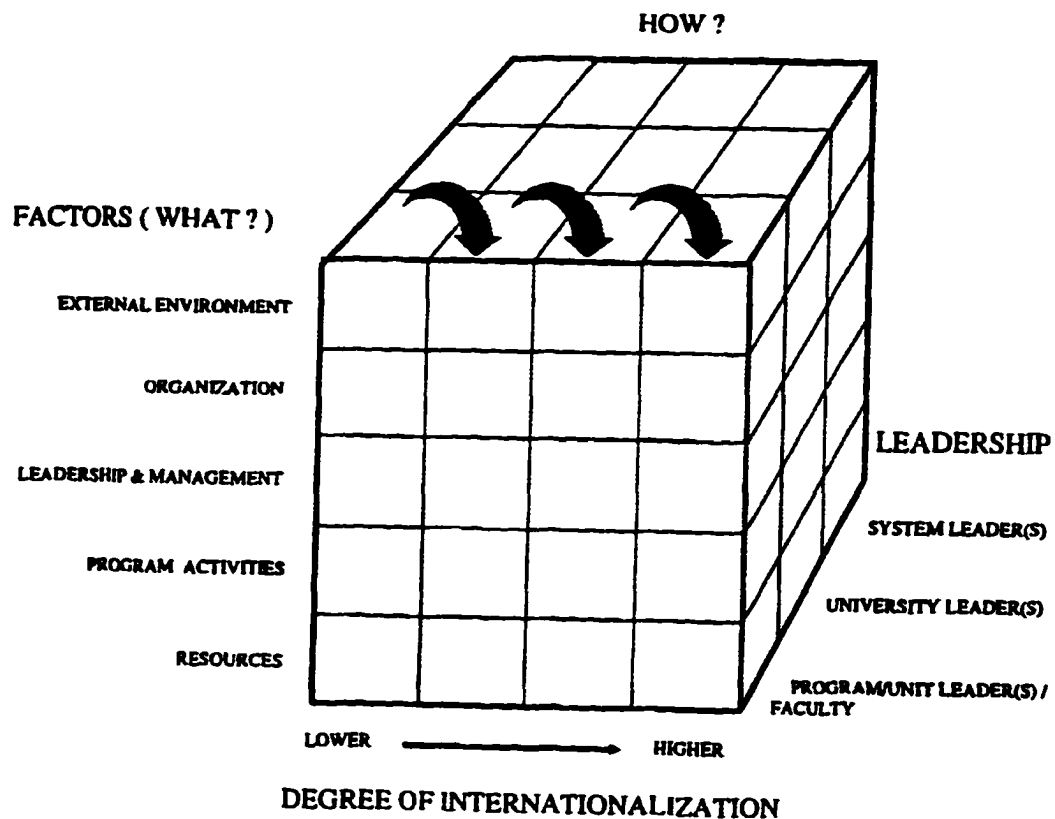


Figure 1. The Henson model of internationalization of universities.

is discussed in the context of comparing low, low intermediate, high intermediate and high degree of internationalization. But there is little discussion of how a university might increase the level of internationalization.

This study attempted to apply this model to the college of agriculture level and add to this model by providing potential interventions to increase the level of internationalization left mostly unanswered by the Henson study. To accomplish this the Henson model will be altered somewhat. While the general factors will remain the same, instead of the functional approach taken by Henson a more humanistic approach is taken here. So instead of factors being "what", for the purpose of this study there will be "who". The Henson model considered this briefly in the realm of leadership. This model will focus much more attention on the groups of who's and what specific interventions they can make to bring about the addition of global perspective education to colleges of agriculture. These factors and interventions then formed a framework within which adding a global perspective to colleges of agriculture can be achieved.

Philosophy

The faculty has long been considered a driving force behind the university. The ideas of academic freedom and faculty as the group responsible for setting the course of academic life is a strong tradition in the U.S. university

system (Cowley and Williams, 1991). The faculty was found in the Henson study to be one of the most important contributors to internationalization. Developing international competencies in faculty was found to occur through the support of top administrators and through providing funds for the effort.

It is likely that the same is true in land-grant colleges of agriculture, but with some special barriers. Peter J. Reilly, in an unpublished essay on internationalization at Iowa State University stated:

At present, we at Iowa State are more isolated than students, faculty and staff at the average university. First, we are, to be politically correct, geographically challenged, in that foreign visitors (not students) venture here less than to universities of our size and stature at the periphery of the country. Furthermore, our students are much less likely to have been abroad, or to have knowledge of international events, for various reasons: 1) they have fewer financial resources than the average university student; 2) they are in the center of a very big country, and many of them have not yet realized that there is a big world out there; and 3) to be provocative, public university and more specifically land-grant university students do not have the wide horizons, in a geographical, intellectual, and aspirational sense, that students at private universities of like size and stature do...

It can be stated further that Iowans in general are more isolated than citizens of many other states, for many of the same reasons that the university is isolated. Beyond these reasons, we receive few foreign tourists, we have benefited from little immigration, and the percentage of our population born within the state is amongst the highest in the country. (p. 169)

This is not only applicable to Iowa State University, either. That many land-grant colleges of agriculture are located in largely rural states and whose faculty and student populations are drawn from largely rural backgrounds compounds

the dilemma. Faculty, students and citizens come from a more culturally isolated background which is likely to raise barriers to accepting a global perspective.

A number of studies have recognized the resistance of many professors in the "hard sciences" to incorporating global perspectives into their work. Once again Reilly, a proponent of internationalization and professor in the Department of Chemical Engineering, wrote:

Claims have been made that the whole Iowa State curriculum can be internationalized. I personally do not see how this is possible. For instance, despite my international involvement and interest, I have been unable to add any significant international content to the engineering courses that I teach. Science and engineering are of course truly international in their subject matter, but this flavor is not easily transmitted in course material. (p. 173)

Reilly goes on to argue for additional courses rather than add global content to existing courses in the humanities and science. This is an option that, at least Iowa State University students oppose (Sammons, 1995) and something that was reinforced by responses in this study of former students of several land-grant colleges of agriculture. It is this type of misunderstanding of an important purpose of global perspective education; the opportunity to provide an understanding that science is not devoid of connection to the rest of human existence, that begs for further analysis of how to best bring about global perspective education. If the professors themselves are incapable of seeing the connection of a global perspective education to their specialization, it is doubtful

that the students and society with which the faculty interacts will either.

In their book Missing the Boat, Goodwin and Nacht (1991) also struggle with the question by analyzing what faculty take advantage of international opportunities and who does not. They found that faculty who have been abroad before are more likely to want to go again. Also, there was an underlying "adventurous spirit" in those scholars that tended to go overseas.

Conversely, there are also four groups of scholars who did not spend time overseas. They are:

1. Know it alls- especially found in the laboratory sciences, are those that believe there is no need to go elsewhere because all of the worthwhile science is being done here in the United States.
2. Lab-bound scientists- due primarily to their responsibilities for the research program and collaborators, cannot take the time to spend overseas.
3. Methodologically sophisticated social scientists- for whom quantitative methods are the epitome of scholarly activity and, therefore, there is no need to go overseas.
4. Some recent immigrants- who have made a psychological as well as physical shift to the United States and see no need to go back.

It is, therefore, obvious that there is considerable opposition to incorporating a global perspective in the educational establishment.

A major obstacle and perhaps the best starting point for considering adding a global perspective to colleges of agriculture is exploring the predominant philosophy in colleges of agriculture. While difficult to categorize because of the

breadth and complexity of curriculum, behaviorism is considered a predominant educational philosophy of colleges of agriculture (Campbell, 1993, Sherrard, 1994). Behaviorism's influence on the colleges manifests itself in the scientific and empirical nature of much of the research and teaching function of the college.

As noted in the review of literature, behaviorism was found to be mostly devoid of any historical connection to global education. Therefore, it is not surprising that difficulty in adding a global perspective education would be experienced. To overcome this dilemma will require faculty to acknowledge their empirical nature and seek to understand other philosophies of education and how their use might strengthen the education program of the college.

This is not to suggest that there will suddenly be some sort of paradigm shift in which faculty will suddenly convert to an alternate view on research and education in agriculture. Rather, moderate steps towards embracing aspects of other philosophies is more likely. The philosophy which was found in the literature review to have the most historical and philosophical significance for global education is humanism. The humanist focus on the learner, the teacher as facilitator, and the resulting self-discovery and assignation of meaning by the individual may best provide the proper balance with the scientific viewpoint of behaviorism.

But the question remains how faculty will come to explore their own and alternative philosophical bases. First, the message must be carried by those in the agricultural science community who have already made the connection. As is obvious in the statement by Reilly (1990) that you can't internationalize all curriculum, even those, as Reilly professes to, who have a predisposition for internationalization don't believe it can be done in their area. It is important to show faculty examples of other faculty who have been successful in bringing a global perspective to their science-based work.

The college administration has a large role to play in bringing this about. As an initial intervention, college faculty should be offered seminars which explore a number of educational philosophies. The goal of the seminars is not to convert faculty to a different philosophy of education, but to raise awareness of different philosophies and how concepts from these philosophies can be incorporated into their own thinking and work. It should be noted that the usefulness for this type of seminar may go beyond adding a global perspective to the college. It would be equally useful in other important topics such as promoting multidisciplinary efforts, experiential learning models, multiculturalism, and others.

There are a couple of key factors that will help make the seminars successful. First is the support and promotion by the college administration and department heads. This includes

some monetary support to provide the seminars but more importantly, a continuous promotion of the idea of looking at other philosophies to meet educational goals. Also, the use of professors who have successfully integrated different philosophies into their college work and who can provide specific experiences will greatly enhance the effectiveness of the seminars.

Experience

As faculty begin to acknowledge a need for altering of their philosophy of education they must soon be offered international experiences to both reinforce this new outlook, but also provide them the tools with which to make significant changes in their research, teaching and/or outreach programs. In colleges of agriculture and land-grant universities, much of this experience in the past has come from involvement in international development assistance projects primarily sponsored by the United States Agency for International Development (Henson, et al., 1991, Jones, 1985). There is some question about the extent to which this led to internationalizing of colleges of agriculture (Jones, 1985). The point is it may, at least temporarily, be moot since present funding for development assistance, particularly in agriculture, is very limited and will seem to be so for the foreseeable future. The same is true for academic and research

exchange programs that have traditionally been funded by the United States Information Agency.

Universities, and the colleges within them, must become more self-sufficient in finding international opportunities for faculty. Thus, administrators will have to make even more difficult decisions on the allocation of resources in order to support faculty international experiences. Something that also should be reconsidered is refocusing some fundraising activities towards this area. Many colleges of agriculture already have a development office. This office can be directed to raise funds to internationalization of the college, some of which can go to faculty international experience.

As noted by a number of authors (Henson, et al., 1991, King, 1991, Jones, 1985), for faculty, particularly young faculty, to take part in international opportunities requires an change in the university reward system. In the past, non-tenured faculty who have been involved in long-term international activities have been hurt by being away from campus. This will remain so as long as the reward system remains focused on primarily rewarding research as evidenced by scholarly publications. The reward system must be expanded to provide greater weight for teaching and service activities, which includes international activities.

Also, support for faculty international research can be enhanced by the establishment of linkages to cooperating institutions in other countries. This may help reduce the cost

of the experience through the cooperating institution providing lodging, meals, transportation, etc. It also allows a faculty member to be able to more quickly and easily take advantage of the experience since infrastructure and support is already in place in the cooperating country. It should be noted, however, that the degree of internationalization should not be measured by the number of linkage agreements that have been signed (Ping, 1991). Having many agreements with little or no activity may look good in the annual report but may do little to add a global perspective to the college.

A key element to enabling faculty to add a global perspective to education is through the study and practice of a foreign language. While Henson notes that one-third of the universities that responded to their survey require language study of students, nothing was mentioned of the need for foreign language competency of faculty. Likewise, Reilly discusses language training at the student level but does not mention it with regards to faculty needs. Language competence would allow faculty to conduct their international experience with greater ease. They will not have to choose English speaking countries in which to conduct their international experience or rely upon English speaking colleagues in other countries. The ability to speak the local language opens the entire spectrum of the population and culture to the faculty. In addition, it sets an excellent example for students to follow in becoming conversant in a foreign language.

Administration has another responsibility which can greatly enhance faculty opportunities to gain international experience. That is to assist faculty to find outside resources which can be used for international activities. This can be done primarily in two ways. First, colleges must have some mechanism through which faculty is made aware and promoted of these opportunities. This is already often done through grant or international offices at the university or college level.

But while some faculty who have never taken part in international activities may be interested, they may be deterred by this lack of experience. That they have never applied for a grant of this type and do not know the method by which to go through with it, may further deter them. Therefore, colleges must follow through with support in preparing faculty proposals and, if necessary assist in the management of the programs. This can be done through the establishment, or reorganizations if one already exists, of an international agriculture office. The extent to which this is supported, promoted and then put into action will be a significant determinant in whether the college is successful in adding a global perspective.

It has also been suggested that the use of foreign students is an integral part of an internationalization program (Henson, Reilly, King). Left unanswered is how to go about this since, as Henson points out, "foreign students are not

fully integrated into academic affairs of the universities beyond their role as students". This is likely due to the fact that foreign students are mostly viewed as students, not as resources, by faculty. This again, likely comes from the predominant philosophical viewpoint of faculty. As more faculty gain a more global perspective it is anticipated that this will slowly change and faculty will use foreign students as a resource to provide a global perspective to American students. In the meantime, it is up to administrator to begin to use foreign students as a resource by including them in international programs, organizations, and to speak to students and faculty about their home countries.

Practice

The true measure of the effectiveness of the moves in the philosophical and experiential realms to add a global perspective to education in agriculture will manifests itself in the practical application. At a land-grant university, this will need to happen in the three main areas of responsibility; teaching, research, and outreach. For this to happen, faculty and administrators must apply more humanistic traits to the conventional scientific reductionism philosophical thinking. They must also learn to take the international experience they have gained and apply it to their work at the home university. All of this is done so that the benefits of this philosophical thought and experience gained does not stop with the

administrator or professor, but is transmitted to the students and the community.

Teaching

A primary responsibility of the university is the training of its students. The ability to infuse a global perspective into teaching requires curriculum reform, improved teaching methods, and informed student advising. To successfully incorporate a global perspective into the teaching capacity of a university requires curriculum reform at the college and course level. College wide curriculum reviews, although conducted at the department level, are needed to bring this about. Individual professors must be assisted to infuse this global perspective into each course. This is far superior to establishing an international course requirement. Infusing a global perspective throughout the curriculum continuously reinforces the notion of a global perspective as well as allows the student to make connections between technical material and global perspectives within each area of study or specialization.

Another important aspect in infusing a global perspective into agriculture is the method of teaching chosen. King (1991) found that at Iowa State University, some of the faculty were taking steps to use teaching/learning strategies and activities which help incorporate a global perspective into their courses, but more are not. Likewise, Sammons (1995) found that Iowa

State University college of agriculture students perceived that while many professors were incorporating a global perspective into their courses, they were doing so in ways in which students were passive listeners rather than active participants in the learning process. This indicates that most learning was taking place at the cognitive level. Sammons and King both recommend that the College of Agriculture encourage faculty to use more active methods in the international content of their courses.

To do this requires a more effective method to incorporate teaching/learning activities which operate not only the cognitive level but also the affective and psychomotor. This requires professors to not only transmit international content of courses to students but to assist students to actively participate in the discovery and experience of the international content. Therefore, learning practices must be adopted at the affective and psychomotor levels. This can be done through conducting course trips, develop case studies, discuss student experiences, and other more active methods. This induces students to not only take in information regarding international agriculture, but causes them to actively participate in the discovery of the information, experience international agriculture for themselves, and through this process determine what the information means to them, their society, and their future in agriculture.

But not all faculty have the ability to do this. One commonly held theory is that faculty members do not have experience overseas. However, the King (1991) study found that 87.5 percent of the teaching faculty at Iowa State University did have between at least one and six months experience overseas. Yet, by the student respondents in the Sammons (1995) study, they were not doing a good job of translating that experience into the classroom. Two conclusions can be drawn from the combined analysis of these two studies: 1) Professors are not getting the correct type of experience or sufficient length of time of experience so that they can incorporate that international experience into their teaching; and/or 2) Professors don't know how to translate that experience into the classroom situation.

It is likely that a combination of these two problems is the culprit on many land-grant university campuses today. Administration and faculty of colleges of agriculture must design faculty experience programs which aim to directly benefit the teaching, research, and outreach aspects of the individual faculty's position in the university. As the faculty and administration develop these experiences it should be explicitly noted in proposals and workplans how this experience will benefit the work of the faculty involved and list explicit steps that will be taken to incorporate the experience into the faculty position. Key to this process is administrators providing support for incorporation of the

experience into job responsibilities once faculty return from the experience. Faculty will need administrators' support to insure they have the time and materials to incorporate the experience into their responsibilities. Also, the experience should be shared with other faculty in their own department as well as other departments and even colleges of campus.

There are several specific steps that can be taken to see this happens. First, college administration and faculty should prepare faculty before they go overseas on how to process their experience and then use it to incorporate into their positions once they return. Also, active assistance should be provided to the faculty member upon return to insure the experience is translated into improvements in the faculty members university responsibility. This can be done through the offering of seminars to faculty before and after the experience which draws heavily upon input from other faculty who have successfully incorporated their experiences into their responsibilities. Another option is the use of a mentoring program which matches faculty who have successfully incorporated international experiences into their responsibilities with those who are just ready to conduct international activities with that goal in mind.

It is interesting to once again note the disparity between the findings of the Sammons and King studies. King found that a good deal of faculty at Iowa State University felt that they were doing quite a lot to incorporate their international

experiences in the classroom while the students did not feel faculty were doing enough. Obviously there is a difference in perception of what is happening at the classroom level. At least in this case, students feel that they are lacking something that faculty feels they are giving. Therefore, it is highly advisable that the faculty listen to and understand what the students feel they want and need. Unfortunately, students are a resource for information that is sometimes overlooked. The students' ideas can be easily incorporated into the global perspective in curriculum decision making process by the establishment of an advisory board for this specific subject. The board should be made up primarily of students who have taken part in international experiences themselves. Through their experience they would be better able to provide faculty and administrators with specific steps on how to translate international experience into the teaching/learning process.

Research

International research in some form has been carried out in a number of fields but has generally been less in the sciences, including the agricultural sciences (Goodwin and Nacht, 1991). While it has been somewhat aided by USAID funded technical assistance programs, this has been generally viewed as a one-way transfer of technology from the U.S. to "developing" countries. A new attitude is needed which recognizes the worth of research being conducted in other

countries which can also be of use to the United States. This requires seeking out foreign collaborators doing interesting and useful research both to come to U.S. universities and also for U.S. faculty to travel there. This can be done by special consideration given to research sabbaticals which will be conducted in foreign countries. The outcomes of this collaborative research should be published both in the home country and in U.S. and international journals.

Many college of agriculture graduate students are from foreign countries. They provide a wealth of information and opportunity for international research. Faculty should encourage foreign students to conduct their research in their home country whenever practical. This will provide faculty with an international experience and also the student with research which is more practical to their home situation. Again, it should be a priority to not only publish the outcomes of this research in U.S. and international journals, but also in students home country and in their native language.

Something else that can make a serious contribution to the continuation of globalization of research is for faculty to remain in contact with their foreign graduate students following graduation. This will allow for the continuous exchange of information as well as potential continued international research opportunities.

Outreach

Adding a global perspective to outreach programs of land-grant university colleges of agriculture is, perhaps, the most difficult to consider. But it is logical that if adding a global perspective to teaching and research aspects of the university and college mission is important, it is also important to the outreach aspect since outreach is simply another equally important service and it can be argued, serves a wider audience since it affects the broader community in the population of the state.

A major goal is to globalize extension programs because of the vast impact they have on agricultural producers, processors, and consumers. As Schuh, (1985) states, the globalization of agriculture will continue. This globalization process already has and will continue to affect the extension clientele. For instance, an often used example is the production of soybeans in South America. What happens there will affect the prices producers will receive for their crops, the availability of raw material for processors, and the price consumers will pay for foodstuffs. Likewise, the social, economic, environmental and political ramifications of agricultural production, processing, subsidization, etc. in other countries will have far reaching affect in the United States and in other countries. The ability for the general population to accept and understand the concept of a world agriculture system is important to the success of the society.

Assisting extension staff in gaining a global perspective can be carried out much the same as with teaching and research faculty. Of primary importance is a broadening of philosophical views. Once again, this can be realized by providing extension staff with information on alternate educational philosophies.

Providing extension staff with international experiences is equally important. In addition, the utilization of extension staff in helping to arrange and providing information, farm tours, etc. for international visitors would allow them a measure of international experience without traveling abroad. As with teaching and research faculty, outreach staff must be guided in developing plans to implement their international experiences into their job responsibilities.

Implication to Agricultural Education

The results of this study have many implications for agricultural and extension education programs in land-grant universities. College students entering teacher education programs are found to be less globally aware as compared to students in other fields of study (Torney and Purta, 1985). So, those being trained to teach children start with less international knowledge and appreciation which will undoubtedly lead to a deficit in the transfer of that knowledge and appreciation to students. This, then, perpetuates the problem

of college students entering the university with inadequate knowledge and appreciation for global circumstances.

In colleges of agriculture, therefore, teacher education programs need to actively recruit students who are globally aware. In addition, teacher education programs in agriculture must take the lead in raising the level of global perspective education in their curriculum and classrooms. The programs will then produce more globally aware teachers who will be able to comprehend and utilize this global perspective and pass this on to their students. Some of these students will go on to college thus raising the level global awareness level of students entering college. The future teachers increased awareness will also lead to increasing the global awareness of the general population by their influence on those high school students who do not go on to college.

Departments of agricultural education also have a responsibility to actively participate in the reform of curriculum in other departments. With staff trained in curriculum development and reform, these departments are a logical resource for other departments to use as they add global perspectives to their curricula. The departments of agricultural education are also a logical resource for the development of teaching skills for a global perspective education in agriculture. Again, because the staffs of departments of agricultural education are experts in the teaching/learning process, they are naturally a resource to be

used in the development of these skills as they apply to global perspective education in other departments within colleges of agriculture.

CHAPTER VI: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to assess the perceptions of recent graduates of colleges of agriculture regarding adding a global perspective to curriculum in colleges of agriculture. No previous studies of this kind on this subject were found in the review of literature. A secondary purpose was to develop a framework for curriculum enhancement to provide a global perspective in the college of agriculture of land-grant universities. This chapter is presented in sections as follows: 1) Summary, 2) Conclusions, 3) Recommendations, and 4) Recommendations for Further Research.

Summary

It is generally agreed among leaders of the U.S. government, business, and other interests that we are in an age of unprecedented interrelationships with foreign governments and peoples. In particular, we have recently seen the development of an evolving international system of agriculture based upon a system of international trade (Schuh, 1985). This development has brought with it an opportunity for increased interaction between nations. Many also believe that with this increased interaction comes the need for additional skills to conduct matters in a global setting. Therefore, for the U.S. to interact effectively we will need an education appropriate to develop these skills. The internationalization of

curriculum to prepare students for this challenge is justified in both social and economic terms (Bruce, 1991).

The descriptive method of research design was used for this study and required the use of quantitative statistical analysis. Based upon the tabulation, depiction and description of the data from this study, colleges of agriculture may make better informed judgments on the what and how of adding a global perspective to the curriculum.

Three Midwest land-grant universities were selected for their proximity and ease of collecting data. This population was accessed through the Alumni Associations at the selected land-grant universities. These schools included Iowa State University, University of Nebraska and the University of Missouri. The target population of the quantitative portion of this study was spring semester, 1990 graduates.

The major findings of the study were:

1. Only 19.4 percent of respondents spoke more than one language.
2. Over seventy-one percent of the respondents had been out of the United States less than one month, with nearly half of them never having left the United States.
3. Over 68 percent of the respondents worked for an organization that conducts some type of international activity with over 45 percent reporting that they were involved in some type of international activity in their job.

4. Respondents had a generally positive view of providing international experiences and knowledge in college of agriculture curriculum.
5. Number of languages spoken and time spent outside the United States are critical factors to one's view of a global perspective in the college of agriculture curriculum.
6. Respondents who worked for organizations that conducted international activities and those who were involved in international activities in their jobs had a positive view of adding a global perspective to college of agriculture curriculum.
7. Respondents were more supportive of a global perspective in the college of agriculture curriculum in economic and technical content areas than in more socially oriented content areas.
8. Philosophy, experience, and practical applications are all important aspects of adding a global perspective to curriculum of colleges of agriculture.

Conclusions

Following are the conclusions of the study:

1. Although most college of agriculture graduates work for organizations that conduct international activities and nearly half are involved in international activities in their work, few college of agriculture graduates speak a foreign language and most have little if any international experience. This conclusion tells us that that employers have a need for

employees who can work in an international setting but by the lack of language skills and experience, graduates are not being prepared for such work.

2. It was perceived that the curriculum of colleges of agriculture need to increase their international content.

3. The greatest need for international content is in the economic and technical areas, which represents a rather narrow and utilitarian outlook on the part of respondents.

4. International experience, either overseas or in domestic work environment, has a significant impact on a graduates' perspective on adding a global perspective to college of agriculture curriculum.

5. A global perspective can be added to college of agriculture curriculum through a broadening of philosophical perspective among administrators, faculty, and staff.

6. Providing faculty, staff and students international experiences can provide an impetus to adding a global perspective to curriculum of colleges of agriculture.

7. Speaking more than one language has a significant impact on graduates' views on adding a global perspective to curriculum in colleges of agriculture.

8. A global perspective can be practically applied in the three realms of the land-grant university mission: teaching, research and outreach.

Recommendations

Following are recommendations of the study:

1. College of agriculture teaching, research, and outreach faculty and staff should expand their philosophical base and be less reliant on the scientific-reductionist model. Of prime importance is the incorporation of more humanistic ideals so that faculty and staff more fully incorporate a global perspective into their university assignment. Colleges should consider a broad philosophical base in making decisions on the hiring of new faculty and staff as well as in the promotion and tenure reviews of existing staff.
2. Administrators should provide support for college of agriculture faculty to gain meaningful international experience. This includes assistance in how to process the experience so that it will be useful in their university assignment.
3. Colleges of agriculture must assist students to take full advantage of their education by providing teaching/learning experiences in which students learn at the cognitive, affective, and psychomotor levels of learning.
4. Students need to take responsibility in seeking out international experiences that will assist them in the likely event they will personally be involved in international activities or work for an organization that conducts international activities.

5. While respondents do not support language requirements, it is clear that language capability is important. Students should seek out opportunities for both formal and informal language study. College faculty and administrators should support student efforts to this end.
6. All employers, including business and industry, should support efforts to add a global perspective to curriculum so that they have perspective employees with the skills needed to succeed in an international environment. This support should not be solely monetary but should also be in the form of information and recommendations on employers' needs and the appropriateness of present programs.
7. Due to their unique specialization in many aspects of what is required to add a global perspective to colleges of agriculture, departments of agricultural and extension education should take a lead role in assisting in curriculum reform of departments throughout the college of agriculture.
8. Departments of agricultural and extension education should provide assistance to all university agricultural educators to improve teaching methodologies so that students learn at the cognitive, affective, and psychomotor levels.

Recommendations for Further Research

Following are recommendations for further research:

1. Further research is needed to understand the philosophical base of land-grant colleges of agriculture and its effect on the teaching, research, and outreach aspects of their duties.
2. A qualitative study needs to be conducted to focus on faculty that have successfully infused a global perspective into college of agriculture curriculum. Emphasis should be placed on methodologies used that have been particularly useful.
3. A nation wide study needs to be conducted focused on of employer's needs for global perspective education.
4. A similar study to this should be conducted with other colleges and universities with agricultural programs but are not part of the land-grant system. Results should be compared with the results of this study.

**APPENDIX A. HUMAN SUBJECTS REVIEW
COMMITTEE APPROVAL FORM**

Last Name of Principal Investigator _____ Date _____

Checklist for Attachments and Time Schedule

The following are attached (please check):

12. ☒ Letter or written statement to subjects indicating clearly:

- a) purpose of the research
- b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
- c) an estimate of time needed for participation in the research and the place
- d) if applicable, location of the research activity
- e) how you will ensure confidentiality
- f) in a longitudinal study, note when and how you will contact subjects later
- g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. ☐ Consent form (if applicable)14. ☐ Letter of approval for research from cooperating organizations or institutions (if applicable)15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact

Last Contact

12/1/95

Month / Day / Year

1/31/96

Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or video tapes will be erased:

3/1/96

Month / Day / Year

18. Signature of Departmental Executive Officer

Date

Department or Administrative Unit

*Richard Carter*11-14-95Agricultural Education and Studies

19. Decision of the University Human Subjects Review Committee:

☒

Project Approved

☐ Project Not Approved☐ No Action RequiredPatricia M. Keith

Name of Committee Chairperson

11/22/95

Date

DMKeith

Signature of Committee Chairperson

**APPENDIX B. COVER LETTER AND
DATA COLLECTION INSTRUMENT**

November 17, 1995

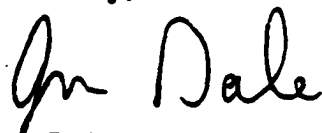
Dear Former Student:

There is much discussion in the popular press and other media about the inter-connectedness of our modern global society. The issue is also being studied on university campuses where administrators and faculty are contemplating adding a global perspective to all educational programs. A number of studies have already been conducted to discover faculty, agribusiness persons, young farmers, and undergraduate student views about adding a global perspective to the curricula in Colleges of Agriculture. An important source of information still missing is from graduates of Colleges of Agriculture. You have been through the educational program and are now applying what you learned in the "real world". Your views and attitudes towards adding a global perspective to the curriculum are very important to gain a complete view of the situation. The results of this study will be provided to administrators of Colleges of Agriculture to make better informed decisions on this important topic. The study is also being conducted for a Ph.D. dissertation.

The information you provide will be strictly confidential and the reporting of the results will be limited to group summary information. All questionnaires will be destroyed once the data is summarized. The questionnaire will take approximately 20 minutes to complete. Participation in this study is completely voluntary. Your nonparticipation will not affect evaluation of the subject. However, if you choose not to participate please notify us by returning the blank questionnaire so you will not be contacted again.

For your convenience, a pre-addressed, stamped envelope has been included for the return of your completed questionnaire. Please return the questionnaire by December 15, 1995. Thank you for taking the time to complete this questionnaire and helping express the opinions of former students regarding this important topic.

Sincerely,



Joe Dale
Graduate Student
Department of Agricultural
Education and Studies



Robert A. Martin
Professor
Department of Agricultural
Education and Studies

PART A: Views on Adding a Global Perspective to Colleges of Agriculture

INSTRUCTIONS: Please read the following statements and indicate how much you agree or disagree with each statement. Use the following categories in determining your response. Please circle the one appropriate letter or letter group.

SD -Strongly Disagree
 D - Disagree
 N - Neutral
 A - Agree
 SA - Strongly Agree

Level of Agreement

- | | |
|---|-------------|
| 1. It is important that college of agriculture graduates have an understanding of agricultural systems of other countries. | SD D N A SA |
| 2. The curriculum of the college of agriculture should reflect a respect and knowledge of the global community. | SD D N A SA |
| 3. The college of agriculture should provide students with a greater awareness of international issues in agriculture. | SD D N A SA |
| 4. College of agriculture students should not be exposed to alternative viewpoints. | SD D N A SA |
| 5. College of agriculture curricula should promote the United States perspective rather than help students develop skills and practices that would be compatible on a global scale. | SD D N A SA |
| 6. The college of agriculture should have a foreign language requirement. | SD D N A SA |
| 7. It is a good idea for college of agriculture undergraduates to take part in an international experience program. | SD D N A SA |
| 8. College of agriculture students need a background of international knowledge in order to develop skills and practices that are more compatible to a global perspective. | SD D N A SA |
| 9. Opportunities for students to gain knowledge and perspective about global interdependencies should be taught in courses other than those in the College of agriculture. | SD D N A SA |
| 10. There is no need to assist students to develop a global perspective in agriculture since this is provided elsewhere in the university. | SD D N A SA |
| 11. The college of agriculture should have a global awareness course requirement. | SD D N A SA |
| 12. The college of agriculture should offer more international experiences for students. | SD D N A SA |

(over)

121

Use the following categories in determining your response. Please circle the one appropriate letter or letter group.

SD -Strongly Disagree
D - Disagree
N - Neutral
A - Agree
SA - Strongly Agree

Level of Agreement

- | | |
|---|-------------|
| 13. Understanding international issues in agriculture helps a graduate of a college of agriculture gain employment. | SD D N A SA |
| 14. The college of agriculture should encourage students to participate in international internship programs. | SD D N A SA |
| 15. College of agriculture curricula should promote the United States' perspective rather than an awareness of other countries' perspectives. | SD D N A SA |
| 16. College of agriculture students need to have completed an international experience before graduation. | SD D N A SA |
| 17. Increasing awareness of the U.S. involvement in international agriculture is an important goal of the college of agriculture curricula. | SD D N A SA |
| 18. Global perspective education will improve job opportunities for college of agriculture graduates. | SD D N A SA |
| 19. Speaking a foreign language will help college of agriculture graduates gain employment. | SD D N A SA |
| 20. When I was an undergraduate in the college of agriculture, I was involved in international activities. | SD D N A SA |
| 21. Adding a global perspective to college of agriculture curricula will not help graduates gain employment. | SD D N A SA |
| 22. Increasing students' awareness and skills in dealing with a global environment will help graduates gain employment. | SD D N A SA |
| 23. Having a global perspective will enhance a graduate's ability to solve problems in his/her work. | SD D N A SA |
| 24. Opportunities to help students to gain experiences in other cultures should be funded by colleges of agriculture. | SD D N A SA |

Use the following categories in determining your response. Please circle the one appropriate letter or letter group.

- SD - Strongly Disagree
 D - Disagree
 N - Neutral
 A - Agree
 SA - Strongly Agree

Level of Agreement

- | | |
|---|-------------|
| 25. Experiences in other countries will change attitudes of students toward other countries. | SD D N A SA |
| 26. International experience is an important component of a land-grant education in today's society. | SD D N A SA |
| 27. Global perspective education will improve job opportunities. | SD D N A SA |
| 28. I would encourage undergraduate students in colleges of agriculture to take part in international opportunity programs. | SD D N A SA |

PART B: Content Areas of International Agriculture

INSTRUCTIONS: Each of the following items represents content areas or concepts of international agriculture. Indicate the degree to which you believe knowledge in these topics is important to the general education of students in colleges of agriculture.

Use the following categories in determining your response. Please circle the one appropriate letter or letter group.

- NI - Not important
 LI - Of Little Importance
 SI - Somewhat Important
 I - Important
 VI - Very Important

Level of Importance

- | | | | | | |
|--|----|----|----|---|----|
| 1. International trade relations | NI | LI | SI | I | VI |
| 2. International marketing systems | NI | LI | SI | I | VI |
| 3. Business practices in other countries | NI | LI | SI | I | VI |
| 4. Crop production practices in other countries | NI | LI | SI | I | VI |
| 5. Educational systems in other countries | NI | LI | SI | I | VI |
| 6. Extension systems in other countries | NI | LI | SI | I | VI |
| 7. Farm management practices in other countries | NI | LI | SI | I | VI |
| 8. Use of agricultural technology in other countries | NI | LI | SI | I | VI |

(over)

Use the following categories in determining your response. Please circle the appropriate letter or letter group.

- NI - Not important
 LI - Of Little Importance
 SI - Somewhat Important
 I - Important
 VI - Very Important

Level of Importance

9. Use of animal power in other countries' agriculture	NI	LI	SI	I	VI
10. Livestock production practices in other countries	NI	LI	SI	I	VI
11. Consumer food preferences in other countries	NI	LI	SI	I	VI
12. Women's involvement in agriculture in other countries	NI	LI	SI	I	VI
13. Dairy production in other countries	NI	LI	SI	I	VI
14. Dietary preferences in other countries	NI	LI	SI	I	VI
15. Social impact of agriculture in other countries	NI	LI	SI	I	VI
16. Business management practices in other countries	NI	LI	SI	I	VI
17. Interpersonal communications in other countries	NI	LI	SI	I	VI
18. Cultural practices in other countries	NI	LI	SI	I	VI
19. Forestry practices in other countries	NI	LI	SI	I	VI
20. Foreign languages	NI	LI	SI	I	VI
21. Environmental practices of other countries	NI	LI	SI	I	VI
22. Foreign government regulations	NI	LI	SI	I	VI
23. Food technology and processing in other countries	NI	LI	SI	I	VI
24. Foreign government trade policies	NI	LI	SI	I	VI
25. Transportation systems in other countries	NI	LI	SI	I	VI
26. Communications systems in other countries	NI	LI	SI	I	VI

Please identify any additional items you believe to be important concepts of international agriculture.

27. _____

28. _____

29. _____

30. _____

Part C. Demographic Information

Instructions: Please read each of the following questions carefully before responding. For each question, circle the response that best describes you or write the appropriate information on the line provided.

1. What is your age? _____ Years

2. What is your gender? Female Male

3. What year did you receive your last degree from a university? 19_____

4. From what University did you receive this degree? _____

5. What is the highest degree you have received? (Circle one)

B.S./B.A.

M.S./M.A.

Ph.D/Ed.D

6. Major department from which you received your last degree (i.e. animal science, agronomy, etc.)? _____

7. Are you a citizen of the United States? Yes No

8. How many languages do you speak?

_____ One

_____ Two

_____ Three

_____ Four or more

9. Total length of time you have spent in a country other than your home country

_____ None

_____ Less than one month

_____ One month to six months

_____ Seven months to one year

_____ One year to two years

_____ More than two years

(over)

10. Which of the following best describes the organization for which you are presently employed?

- ☐ Business
☐ School, college or university
☐ Non-profit organization
☐ Local, state, or federal government agency
☐ Other _____

11. To your knowledge does your organization conduct any international activities?

Yes No

12. What is your present job title with the organization? _____

13. How many years have you worked for the organization? _____

14. In your present position are you involved in any international activities? This includes all types of international activities including work directly in foreign countries, interaction with individuals from foreign countries, or interaction with U.S. personnel who are presently or have previously worked for the organization in another country.

Yes No

15. Briefly describe your international responsibilities/experiences.

16. General Comments: Please share any comments you may have regarding adding a global perspective to the curriculum of Colleges of Agriculture.

Please return the questionnaire in the accompanying self-addressed stamped envelope.

Thank you.

APPENDIX C. FOLLOW-UP COVER LETTERS

March 22, 1996

Dear Former Student:

This letter is a follow-up to our previous mailing of December, 1995. To date we have received insufficient response to complete the study. We once again ask your assistance by completing the survey.

As you may recall from the previous mailing, the issue of adding a global perspective to university education programs is presently being contemplated. A number of studies have already been conducted to discover faculty, agribusiness persons, young farmers, and undergraduate student views about adding a global perspective to the curricula of Colleges of Agriculture. An important source of information still missing is from graduates of Colleges of Agriculture. You have been through the educational program and are now applying what you learned in the "real world". Your views and attitudes towards adding a global perspective to the curriculum are very important to gain a complete view of the situation. The results of this study will be provided to administrators of Colleges of Agriculture to make better informed decisions on this important topic. The study is also being conducted for a Ph.D. dissertation.

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For your convenience, a pre-addressed, stamped envelope has been included for the return of your completed questionnaire. Please return the questionnaire as soon as possible. Thank you for taking the time to complete the questionnaire and helping express the opinions of former students regarding this important topic.

Sincerely,

**Joe Dale
Graduate Student
Department of Agricultural
Education and Studies**

**Robert A. Martin
Professor
Department of Agricultural
Education and Studies**

May 3, 1996

Dear Former Student:

This letter is a follow-up to our previous mailings. To date we have still not received sufficient response to complete the study. We once again ask your assistance by completing the survey. A small token of our appreciation for your patience and assistance is included with this letter.

As you may recall from the previous mailings, the issue of adding a global perspective to university education programs is presently being contemplated. A number of studies have already been conducted to discover faculty, agribusiness persons, young farmers, and undergraduate student views about adding a global perspective to the curricula of Colleges of Agriculture. An important source of information still missing is from graduates of Colleges of Agriculture. You have been through the educational program and are now applying what you learned in the "real world". Your views and attitudes towards adding a global perspective to the curriculum are very important to gain a complete view of the situation. The results of this study will be provided to administrators of Colleges of Agriculture to make better informed decisions on this important topic. The study is also being conducted for a Ph.D. dissertation.

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Sincerely,

**Joe Dale
Graduate Student
Department of Agricultural
Education and Studies**

**Robert A. Martin
Professor
Department of Agricultural
Education and Studies**

APPENDIX D. RESPONDENTS' WRITTEN COMMENTS

**Additional Content Areas for International Agriculture
as Suggest by Respondents**

World soil resources

Role of multi-national corporations

Climatic factors

Population of foreign countries

Research/research systems

University education

Population growth

Grain, food and fiber usage

Trade agreements between different countries

Consumer needs for agricultural products

Overall crop performance for a particular region

Laws, transportation, communications, cost

Money, credit and payments

U.S. government food aid programs

Water transportation

Metric system

Soil conservation practices/sustainable agriculture (global examples)

Impacts to water quality, landscape, and soil loss from poor land use practices

Fine tuning world marketing opportunities through increase awareness of cultural practices

Agricultural trade

Farming practices/beliefs

Appropriate technology, cultural awareness of agrarian societies (foreign)

"Development" as an agricultural aid in US policy

How monocrop agriculture impacts foreign export commodities, culture, and biodiversity

Progression of environmental impact (i.e. intensive farming to desertification)

Global food supply management

Vegetarian lifestyle vs. carnivorous as related to dollars and resource costs

Wildlife management in an agrarian world

Customs or cultures

Religion

Market places

Storage of food stuff

Impact of religious beliefs in ag practices in other countries

Poultry husbandry

Appropriate technology

Internet use & applications for use internationally

Drug smuggling through ag products

Illegal trading

Politics and pricing of ag products

Should live 3 months to 4 months for internship in country; crops

Soils

Sociology

Food consumption patterns

Population impact

Exporting/importing patterns - especially China and Russia

The role of livestock to societies in different countries

Important breeds of livestock in different countries

The use/importance of animal manure and other products in different countries

Crop and livestock problems in different regions of the world

Financial evaluation of businesses

Health - agricultural/occupational

Learning from the best in a country (example irrigation in Israel)

No need to learn production practices in third world countries

There is a need to know the types of ag products a country likes so we can fill that need

A need to help the earth's environment world wide

I believe it is important to the U.S. to be competitive on a global basis in marketing our agricultural products internationally. Students need to understand foreign markets and regulations

Agricultural research practices

Soil and water conservation practices

Deforestation and reforestation practices

Hardship of life in other countries

Amounts of trade between countries and its importance (trends over the past 20-30 years)

Knowing about the professional societies i.e. ASAE

Local religious cultures and customs

Microclimate of intended area of study

General political stability of area of study

Import/export laws as they relate to agriculture

Tariffs and quotas on imports/exports

Worldwide weather patterns as they pertain to crops

U.S. foreign policy and how other nations perceive us as Americans (greedy, generous, helpful, cheaters, etc.)

Farm policies of other countries

Monetary value fluctuation - change in \$ value

**RESPONSES TO ITEM 15 OF PART C: DESCRIPTION OF
INTERNATIONAL RESPONSIBILITIES/EXPERIENCES**

My company is headquartered in Austria, I write technical manuals for Ford, GM, and Chrysler for use in the U.S. and Europe. I am involved in translating/writing in German, Spanish and English. I do travel to Austria and other European regions on business.

Work with our home office personnel in our international division getting hybrid seed corn shipped to other countries. Familiar with packaging and regulatory requirements.

Harmonization of pesticide registration policy under CUSTA (NAFTA) with Canada. Also, harmonization work with Europe through OECD.

I work directly with people in developing countries to develop disease (animal) eradication programs.

Shipping grain across the border of Mexico.

Marketing/promotion.

Advise foreign food industry personnel on technical matters.

My company owns and conducts business in many foreign countries (I work for ConAgra, Inc. - Omaha, NE). Many food products are made here in the US to be exported to foreign countries - I work with R & D and manufacturing to make sure that the products being exported meet food safety and quality criteria.

Call buyers in Canada and Mexico to help pay invoices.

Sales and marketing, coordination and communication.

Technical sales in Far East and Mexico.

We export hogs to foreign countries, mostly to Mexico. I deal with the customers frequently. Handling the money and any questions they may have.

Grain marketing.

Contact with researchers and other companies such as ...research and business related ...

Research on maize breeding.

Research based.

Working for the University, I occasionally work with graduate students who are from foreign countries. I help them with certain aspects of their research.

Provide tours to visitors to the Center for Crop Utilization Research. Work closely with international students in the department as research and work supervisor.

Contact with individuals and delegations from other countries including visiting professors and students.

Educate foreign scholars in American culture/practices and language, translate for speakers and letters, continue to learn.

Research.

Responsible for the production of hybrid seed through contracting with local farmers and overseeing seed production operations.

Interaction with Canadian and Mexican Bankers' Association. Interaction with Russian financial diplomats.

Interaction with co-workers from other countries.

Have foreign graduate students.

Work with foreign graduate students.

Work with a graduate student from Mozambique.

Collaborate with foreign co-workers.

I routinely work with graduate students from a variety of foreign countries. China, South America, Australia, etc.

Tours for Chinese, Mexican, Puerto Rican managers, members of wheat trade commissions, etc. Schooling in Germany, Switzerland. Strike relief in Puerto Rico.

Have "hosted" and given overview of our company's credit policies, etc. to foreign visitors from former Soviet Union on 3 occasions.

Was employed by government with a World Bank project to lead the implementation of T and V extension in one African country (multinational team). World Bank scholar/researcher at ISU.

Develop and manufacture processed meat products. International customers are about 15% of our business. Customers are in Canada, Japan, Middle East, Central America.

I will work with other plant breeders who work in other countries by identifying superior genetics. I work at winter nursery locations.

Helped Danish interns with research projects while they were at our facility for 3 mos. Also discussed American vs. Scandinavian customs. I have given tours of QA lab to people from Central America, Canada, Scandinavia, and Japan. Worked (briefly) with an engineer here who worked for the Scandinavian owners and also in Germany and went back to work in Germany.

Work with commodity trading, which is greatly influenced by foreign markets.

On occasion - provide tours and industry overview to foreign visitors.

I'm a QA inspector for a meat packer. We follow specifications for products shipped overseas. And have visitors from other countries tour our facility before ordering.

Conducted workshops in Botswana and S. Africa on drought management and preparedness; and decision aids in farming to gov. workers in India.

Advise students from other countries/other grad students from international area.

I instruct foreign students, both graduate and under-graduate, and conduct tours of our research facilities.

I am a daughter of immigrants and have visited relatives in Germany.

My company has winter seed production in Chile, Argentina, and Mexico. As yet I have not spent any time in this area but I will not be surprised if I am asked to help with production in one of these areas. We also have sister companies in Europe and Australia.

Work with many international students/faculty/residents/staff.

4-H exchange student.

No responsibilities w/ my job. It is strictly inter-state in nature.

Drove through Canada to get to Alaska.

My experience indicates that understanding of global scale for undergraduate and graduate students is very positive. I offer

my position and institutions to help you in reaching this goal. I don't work in international activities, but the IND (National Institute for Ag. Technology) and the National University of Rio Cuerto have agreements, exchanges and other international activities.

Interaction with foreign students, plus I worked as irrigation specialist in Sudan, Africa.

I have worked in rural community development cross-culturally for over thirteen years and have live in Asia for nineteen years. I am now managing a team of 14 expatriates and Laotian nationals and our organization is implementing a rural development project in NE Laos. This includes: agriculture, irrigation, health, clean water, and education.

Promotion of U.S. agricultural exports through trade shows, seminars, etc. As well as through contacts with foreign governments officials and market intelligence.

Exchange program through FFA.

Cooperative Extension exchange program working with two-generation farm operations (Father-Son/Daughter) in Ireland.

I work for Pacific Crest Outward Bound approximately 5 mos./year. I work with instructors from many countries; Canada, England, Australia, Nepal, New Zealand. I also work with many instructors whom have instructed for Outward Bound internationally - Kenya, Hong Kong, Australia, and Bali to name a few. I have had students from the Philippines, Panama, England, and New Zealand. I spend 2-4 weeks out in the field engaged in adventure education. There are many opportunities for me to expand internationally.

I have very little international responsibility. Once in a while some regulatory dealings with animal movement into Canada or Mexico.

Coordinate development at sustainable business that produce products that are "certified sustainable."

Present Nebraska regulations pertaining to livestock waste control.

Company owned by Canadian company.

Close friends with someone who studied and lived in Europe for one year (Spain and Portugal).

Vacation and travel in Mexico and Canada. Looking at some livestock and crop production practices.

Some International based research - primarily with Latin America. My international ag experiences at Iowa State contributed to my current research focus.

Training foreign scientists about US agriculture.

I work with foreign students.

Studied in foreign countries. Attend international workshops. Conservation of animal genetic resources.

Some of my supervisors are based in London, and I speak with them on a daily basis. The reports I file for my company - Dow Jones Commodities Service - are sent to Dow Jones subscribers around the world.

We are a major supplier of fresh and frozen pork products to Japan, Korea, Taiwan, and Eastern, Europe. I must ensure that the product for these orders is scheduled to be produced and shipped properly and in a timely basis.

International product labeling requirements both edible and inedible. Foreign country food preferences, consumption practices, storage, shipping.

I am involved in the import of international products and their pricing and distribution within the U.S.

Microbial testing for products exported to Japan and Mexico.

We have recently purchased an Ag. company in the Ontario region of Canada and directly develop market plans etc. with our counterparts in Canada.

Technical assistance in providing/formulating products (edible) for foreign use/sale (in present position). Previous position was with a Japanese food company (in the USA). Our products/sales were heavily dependent on Japans economy and preferences. Spent a full year in Germany at federal food research institute. Realized importance of a global perspective and experiences.

Trading grain to international markets and domestic markets. I have work with the Japanese for 2 years. Communication with all international markets is difficult. Culture and perception play a major part in the day to day business dealings.

I travel intercultural 3 to 4 times per year. My direct reports are daily to weekly contact with several countries. The company sells products in 52 countries.

We are a global company - much interaction with people from all over the world.

Work and teach students from foreign countries.

Responses to Item 16 of Part C: General Comments

Most businesses are moving or on a global scale so students should aware of this. Gone are the days of operating on an isolationist scale. I'm sure everyone will deal with people or business from foreign countries.

Excellent idea.

The world is becoming a smaller place as technology advances and international trade agreements are made. We must be able to relate to other cultures and understand their agriculture if we are going to do business there.

Not necessary. Lets worry about solving the problems in the good ol' U.S. before we worry about anything global. I'm not being blind here, I realize this will involve many things on a global scale, but lets get our own act figured out before we mess with anyone else's.

Good idea. Need to hire people that have experienced the international business. Please don't use research staff or native of a foreign country. Hire someone that can tell it like it is on the American business side.

Has its place in curricula, but caution should be used in making requirements of students in the global perspective fields!

With better transportation and communication, we (in the USA) are going to become a part of global events. To survive in global markets we will have to be knowledgeable internationally. We cannot take it for granted that all other countries will play by "our rules" and not affect our economy.

American farmers need to work on becoming low cost producers of top quality products and other countries will come to us.

I strongly believe that experiences and knowledge gained abroad develops an individual's ability to appreciate structure and technology at the same time, gaining creativeness as a result of exposure to varied practices and skill levels.

In the business or production side of agriculture a global perspective is becoming more and more of a "bonus". Within a few years this knowledge will be mandatory for people in the agriculture area.

I feel students should have opportunity to study in subjects with global perspective if they wish. However, I don't think

making such subjects required for all students is the proper thing to do.

The U.S. should understand a global economy but, we would do better in a global economy if we would concentrate our efforts to gain agricultural power instead of helping other countries gain access to our markets and resources.

When universities do not take responsibility of opening the doors of their education programs to the world, they do a GREAT injustice to the future of their students, their own standing in the arena of higher learning, and to the world's future production of food and beverage.

Global perspective should be strongly encouraged - even if student plans to return to farm - they will be better business managers if exposed to another culture/business environment.

I wish I had the opportunity to learn more about international monetary policy and trade agreements. Understanding of other cultures also helps nurture the customer/client relationship by avoiding embarrassing situations.

It should be very limited.

College of Ag undergrads should have opportunities to pursue global perspective, but should not be required to take foreign languages or travel abroad.

It seems to me that giving students a global perspective only makes sense in part because the health of U.S. agriculture depends on consumption of U.S. products around the globe.

1. What we do today in agricultural production and research must satisfy the demands for a safe environment. 2. The environmental and animal rights groups are forces to contend with. 3. Knowing the production systems and practices in other countries may provide alternatives for agricultural production.

It's a good idea. But it must not be tainted with American P.C. We are still focused on the Americocentrist P.O.V. This type of curriculum will surely benefit its constituents if administered properly.

Some of my answers may appear to be negative, but as an agriculture teacher in rural Kentucky, these things are not important to me. Most out students will more than likely go back to the farm; much of this would not be useful for me. Someone going into business may be more interested in this type of study.

Strongly urge courses in international agriculture, culture, marketing, and government.

Any of these classes should be optional to each particular student, but definitely not required.

Some international class at a base level should be required. Further involvement should be the choice of the student, but college should at least make it available.

Global perspective is good. Everyone need to be aware of the world as a whole puzzle. But the traveling to and spending time in foreign countries needs to be a choice of the student.

Agriculture today we need the international business. But I also feel that when in school you need to have a choice as to what you are going to do. If you want to work overseas fine but I personal do not want to have to take courses just because the college thinks we need to. Some people do not want to work overseas, and some do. I don't want a job in an office with talking on a phone to someone overseas. Someone else yes, me no.

Basically hitting on points of how agriculture has changed internationally over the past 50 years. (Trading, marketing, etc. and how it affects us as citizens). I think it would be very beneficially maybe more so in future years.

Think it would be a good idea.

I believe that for some majors this would be a requirement. For most majors 2-3 classes may be a good idea, esp. marketing.

While having a global awareness education will help some agriculture students, most people are going to work here in the U.S. and deal with local aspects of agriculture.

I feel there should be a global perspective added as everything today is moving towards a "global economy" and ag exports are becoming more important. We definitely need to keep promoting US perspectives but there should be a balance between US and global perspectives. I would be against too may requirements on global perspectives but feel they should be available because every job wouldn't need a "global" background.

I believe this is an excellent emphasis to either enable students to complete in a global economy. Please emphasize biodiversity protection.

Global knowledge would help especially in areas of marketing and international agri business.

Make it available separately but don't pollute the good domestic classes with a foreign overtone, thereby not covering it well and also lessening the quality of the current classes.

Consider offering global perspective courses as an elective. Gain feedback from those who take those courses. Then reconsider a required course in global perspective in agriculture.

I feel that as the human population grows and resources become more and more limited, it is imperative that we begin to think on a planetary level. Hopefully, the College of Agriculture will help to explore many methods of food production and resource management. Students should be encouraged to evaluate traditional agricultural practices based on long term environmental impacts as well as production and economic return.

I think it is already there and what's there is enough. For example, I think now (March '96)) they've talked about the Mad Cow Disease situation in England. If the professors haven't brought it up, the students should have. I'd hate to have them say "we can't talk about that, that's international". But at the same time, I don't think there needs to be a requirement that students take a class in livestock (or crop) production in Europe.

I don't believe that international expertise should be the goal of ag colleges for all students. It should be available as an area of specialization for those who choose to pursue it. However, a basic awareness of the importance of an international perspective, trade relations, where major importers/exporters of global commodities are located, and the impacts on world commodity prices and on the U.S. commodity prices should be required of all ag students.

Should include in curriculum, but not mandatory as a separate class. Relevance should be touched on in each subject that has an international component.

For me, the best way to gain an international perspective was to work with and get to know students from other countries.

The WEA program I participated in after high school gave me an experience that can not be taught in school. I know everyone doesn't want or can do this but if we understand other cultures and practices we not only appreciate our own country and situation but understand the affects the international community has on the U.S.

I am not certain exactly what this global perspective you speak of is. However, for the U.S. businesses I work with, there is little doubt that getting to know the country and establishing strong contacts with reliable local businessmen is vital. Perhaps strategies for this can be taught in college to a certain extent. I think it just requires lengthy visits to the country with aggressive market research. I have also found that U.S. businesses with such a huge domestic market tend to overlook international markets even though the potential profits are huge. This is particularly true for mid-size or small markets like the Philippines.

Competing in the global marketplace is a dynamic experience...its always changing. I feel the role of a university is to teach and train the technology. Technological priorities are constant, how you use them depends on the situation at hand.

Great idea, but not a requirement! Increase exposure but students don't need any more requirements! They should be able to plan their own schedules.

I strongly agree that courses with an international perspective be encouraged, especially for those students with the desire to work in an international setting. But many students will not be working in that kind of context, so a more general knowledge of international matters is sufficient for them.

In the present information revolution it is important that we see things globally and solve agricultural problems together. If you lack the knowledge you can't be a problem solver. It is important to know a food problem in Mexico is a problem to the USA. Deforestation in South America is environmental pollution to the neighboring continent and can affect in global warming. It is important to remember when there is shortage of food there is war, unrest, and crime and terrorism everywhere.

It isn't going to matter what you do anymore. The rich get richer, the poor get poorer.

I feel that some emphasis should be placed on the global perspective of agriculture but I think the depth that a particular student get involved should be left to the student. I am definitely against requiring an international experience. I feel that a unit in intro to Agronomy (required) would suffice, with an optional 300 - 400 level course. Students can't be required to take courses in every aspect of agriculture, let them decide which road to follow.

I do not have a job that requires international work, however, I do need to have a good understanding of what is going on in the world. I buy commodities to produce animal feed and need

to understand why grain prices fluctuate. It would have been beneficial to learn more about the global community in college. I think this should be provided in ag school. The business school emphasizes other type of markets and issues.

I feel it may help a graduate to find employment but will not guarantee employment. There are so many areas that will help graduates find a job it is hard to say one area will be the key. Obviously if a student wants that as a n area of emphasis, great.

Global awareness is something that should be encouraged and promoted without being pushed. Pushing global awareness without making the benefits clearly defined is likely to backfire.

I feel it would be a good addition to the curriculum for awareness of things abroad.

I support the idea for adding a global perspective to the curriculum of ag.

Knowledge of global issues certainly is not a factor of employment in all business sectors, but is a major factor for others who often have difficulty finding graduates with international experience.

Good idea.

I would be very hesitant to require either a course or experience on international agriculture. It will be important to some, but not all, students.

Several questions referenced increased job opportunities in response to gaining a global perspective. I would think long-term benefits would be gained in areas moving ag towards long-term sustainable practices and on better targeting global markets and foreign preferences. This will eventually lead to increased job opportunities.

I think it would be very beneficial in today's "new world order" and would also allow graduates to understand their role internationally or globally, much better.

Global trade is the future.

Provide opportunities, not requirements for international experience. ISU is unique for its strong domestic ag program - don't jeopardize it for international components. I have lived overseas and am married to a foreign national. My interest has always been self-driven, not pushed on me. I'm at a school now

that emphasizes diversity and international and it hurts domestic ag.

I believe a "global perspective" needs a place in ag education. Our world is becoming smaller because of better communications, fall of communism in many places, etc. I believe people in ag need a feel for conditions in other places, trade agreements, methods of agric. etc., to be able to better understand the consumer - not just in the U.S. but other countries, too.

I think that adding a global perspective is a good idea. It should stress "real world" situations and examples. In my short time in the work force I have witnessed several persons who were misinformed as to what to expect in the "real world". Theories and high tech state-of-the-art this and that are great but not necessary "real world".

I can see a real need for a global perspective for the student going into international agribusiness affairs, etc. But the students (and their parents) who are going back to work on the family farm will probably feel too far removed from global perspective, creating indignation about such a program.

This is a good idea as long as it doesn't detract from the quality curriculum already offered by the College of Agriculture.

I really regret not taking advantage of the opportunities available to travel to other countries while at ISU (i.e., ag travel course, Russia student exchange, etc.) I would have liked to be exposed to other countries and the agricultural systems they employ. However, I do not believe an international experience should be a requirement for graduation. Most jobs in the real world simply don't require a international understanding or language knowledge.

A limited number of classes regarding "global perspective" should be offered but none mandatory. A small number of ag graduates would be actually applying info from global classes in the real world.

I believe that an international perspective would be useful in some agricultural settings, however I don't believe there are enough of these settings to require students to take certain courses. Many students choose to expand their international knowledge by choice. These students often seek these settings and where their international experiences are useful.

Knowing how to produce a product that will sell internationally is the biggest reason for studying foreign countries. I also feel we might be able to learn from some of their practices. I

do not think anyone should be forced to take classes pertaining to the global perspective but they should have a chance to study the subject if they want and to the level they desire.

Global perspectives are great, but don't sacrifice U.S. agriculture. Iowa State covers the Midwest basics very well. Don't lose education efforts in fruits/vegetables, cotton, poultry, small grains, wool, etc.

I believe that a person attending a college or university studies a portion of agriculture his or hers interests are. Therefore, international agriculture should be made available but not a requirement.

I believe it should be an option that is strongly recommended but not a requirement for graduation. Not all student go into agri-business with international ties.

I don't feel it is necessary to make every foreign nation so production efficient that we lose out on exporting our own products and supplies. We should be more concerned about developing and maintaining foreign trade. I'm very concerned the way agriculture within our own border is heading. I'm not for big business running agriculture.

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